Collaboration of Andalas University with
Deutscher Akademischer Austauschdienst

ABSTRACT AND PROGRAM

INTERNATIONAL CONFERENCE ON CONTEMPORARY SCIENCE AND CLINICAL PHARMACY

GRAND INNA HOTEL PADANG AND
MANDEH ISLAND, INDONESIA
JULY 5 - 7, 2018

Welcome Message from the Chairperson of 1st ICCSCP 2018 INDONESIA

Assalamu'alaikum Warahmatullahi Wabarakaatuh
Distinguished Speakers, Honourable Participants, Ladies and Gentleman

It is my pleasure to welcome all of you to the 1st International Conference on Contemporary Science and Clinical Pharmacy (ICCSCP) in Collaboration with DAAD Germany which will be held from July 3-7, 2018 in Padang, Indonesia.

We hope we will make this a truly exciting journey of knowledge for all delegates. With the conference theme "Search for a Better Quality of Life", the 1st ICCSCP will begin with the preconference workshop on Biotechnology and Clinical Pharmacy. Please take advantage of workshop to advance your practical skills and in-depth insights to specialized knowledge.

Furthermore, there will be more opportunities for the exchange of specific ideas via keynote, plenary sessions oral and poster presentation during the conference. At the end of the conference, delegates can join Focus Group Discussion on July 7, 2018 at Mandeh Island.

While enjoying the rich features of various scientific programs, we hope you will take some time to enjoy our beautiful Indonesia. I wish you a delightful stay and hope you take home the very best of memories from this conference.

Thank you,

Dr. Yelly Oktavia Sari, M.Pharm, Apt
1st ICCSCP 2018 Chairperson

Welcome Messages from The Dean of Faculty Of Pharmacy, Andalas University

In the name of Almighty Allah and His Messenger who taught us the meaning of life, I would like to welcome all participants to the International Conference on Contemporary Science and Clinical Pharmacy 2018 (ICCSCP) Organized by The Faculty of Pharmacy – Andalas University in collaboration with DAAD Germany. This event also dedicated to our faculty members who will retire this year: Professor Dr. Dayar Arbain and Professor Dr. Elfi Sahlan Ben.

The topic of this seminar focusing on 4 aspects of Sustainable Development Goals (SDGs):

1. Zero Hunger (SDG 2): to end hunger, achieve food security and improve nutrition and promote sustainable agriculture.
2. Good Health and Well-Being (SDG 3): to ensure healthy lives and promote well-being for all at all ages.
3. Life Below Water (SDG 14): to conserve and sustainably use oceans, seas and marine resources for development.
4. Life on Land (SDGs 15): to protect, restore and promote sustainable use of terrestrial ecosystem, sustainably manage forests, combat desertification, and halt and reserve land degradation and halt biodiversity loss.

ICCSCP presents interesting topics on the latest developments and current issues in pharmaceutical science and clinical pharmacy services. The speakers at this seminar are experts in the field of pharmacy from home country and the overseas.

ICCSCP has invited plenary speakers from Germany, UK, USA, Switzerland, and Indonesia who will share their experiences in the latest topics on Natural Products, Pharmaceuticals, Pharmacy Hospitals and Communities, and Pharmaceutical Chemistry.

Our honorable guest, please allow me to give brief introduction of our institution. The establishment of the Faculty of Pharmacy, is inseparable from the long history and development of the Department of Pharmacy, Faculty of Mathematics and Natural Sciences in 1964. Post graduate study was started in 2002. Department of Pharmacy was converted to Faculty of Pharmacy in 2008. Facutly of Pharmacy has been accredited excellent nationally. We have a lot of cooperation with related institutions both inside and outside the country. Our research are mainly in the development of medicine from natural materials. Our Vision is Being a leading and respected Faculty of Pharmacy nationally and internationaly which produce graduates with strong competitiveness in the pharmaceutical field, especially the development of drugs from natural materials in 2028

Finally, Faculty of Pharmacy, Andalas University hightly appreciated to the speakers and participats for spending your time with us. Thanksgiving is also given to the committee who has worked hard so that this event can be done, DAAD and Wardah which sponsor of this event and Rector Andalas University who support us.

May God bless all of us.

Dr. Fatma Sri Wahyuni, Apt
Dean of Faculty of Pharmacy, Andalas University

Plenary Speakers

PROF. DR.BURKHARD KLEUSER

University of Potsdam, Germany

PROF. DR. GÜNTHER WEINDL

Freie Universität Berlin, Germany

PROF. ZAHEER-UD-DIN BABAR

University of Huddersfield, England

PROF. TAIFO MAHMUD

Oregon State University, USA

PROF. EDY MEIYANTO

Gadjah Mada university, Indonesia

PROF. DR. DAYAR ARBAIN, APT

Andalas University, Indonesia

PROF. DR. ELFI SAHLAN BEN, APT

Andalas University, Indonesia

DR. MOUHSSIN OUFIR

University of Basel, Switzerland

Invited Speakers

Invited Speakers

NURHAYATI SUBAKAT

CEO Paragon Technology and Innovation (Wardah Cosmetics)

PROF. SANJAY K. SHARMA, FRSC

JECRC University, Jaipur, India

PROF. MASASHI KAWAICHI

NARA Institute of Science and Technology, Japan

Plenary Lecture Schedule

Schedule ICCSCP 2018

Day 1 Thursday, July 5, 2018	
07.30 – 08.00	Registration
08.00 – 08.45	Opening Ceremomy, Rector of Andalas University
08.45 – 09.00	Tea break
Session I	
09.0 0– 12.00 (45 mnt/ person)	**Plenary Lecture I** PROF. DR. BURKHARD KLEUSER
	Plenary Lecture II PROF. TAIFO MAHMUD
	Plenary Lecture III PROF. ZAHEER-UD-DIN BABAR
	Plenary Lecture IV PROF. DR. DAYAR ARBAIN, APT
12.00 – 13.30	Lunch Break Poster Presentation
Session II	
13.30 – 15.00 (45 mnt/ person)	**Plenary Lecture V** DR. MOUHSSIN OUFIR
	Plenary Lecture VI NURHAYATI SUBAKAT
15.00 – 17.30 (10 mnt/ person)	Oral Presentation and Discussion

Day 2 Friday, July 6, 2018	
Session III	
8.00 – 10.00 (10 mnt/ person)	Oral Presentation and Discussion
10.00 – 12.00 (45 mnt/ person)	**Plenary Lecture VII** PROF. DR. GÜNTHER WEINDL
	Plenary Lecture VIII PROF. EDY MEIYANTO
	Plenary Lecture IX PROF. DR. ELFI SAHLAN BEN, APT
12.00 – 13.30	Lunch Break Poster Presentation
Session IV	
13.30 - 15.00 (45 mnt/ person)	**Plenary Lecture X** PROF. SANJAY K. SHARMA, FRSC
	Plenary Lecture XI PROF. MASASHI KAWAICHI
15.00 – 17.30 (10 mnt/ person)	Oral Presentation and Discussion
17.30 – 18.00	Closing ceremony

Oral Presentation Schedule

Oral Presentation Schedule

Oral Presenter
Session 1
Thursday, July 5, 2018
15.00 - 17.30 WIB
Room A

Time	ID	Presenter	Title
15.00 – 15.10	186	Riris Istighfari	Antiproliferation and antimigration activities of PGV-1 on triple negative breast cancer MDA-MB-231 cells
15.10 – 15.20	32	Azizah Nasution	Identification Of Drug Related Problems For Dengue Haemorhagic Fever In-Patients Admitted To Dr Pirngadi Hospital Medan
15.20 – 15.30	63	Desmawati	The Relationship of Macronutrient Intake and Physical Activity Levels with Nutritional Status in Minangkabau Adult Women
15.30 – 15.40	125	Johan Arif	The relation of ancient human health with climate: Case study of Batujaya population from West Java, Indonesia
15.40 – 15.50	54	Eva Decroli	Correlation Between Malondialdehyde and Nerve Growth Factor Serum Level in Patient with Diabetic Peripheral Neuropathy
15.50 - 16.00	130	Hidayah Karuniawati	Rationality of the use of secondary stroke prevention therapy in ischemic stroke patients in education hospital in Central Java
16.00 – 16.10	168	Zakky Cholisoh	Predictors of Medication Adherence Behavior to Secondary Stroke Prevention Therapy
16.10 – 16.20	205	Yoneta Srangenge	Evaluation of antibiotic use pattern on cesarean section patients in obstetric and gynecology department of Dr M Djamil Hospita L
16.20 – 16.30	216	Marsya Yonna Nurrachma	Anti-migration and anti-invasion activity of Piper nigrum L. on 4T1 metastatic breast cancer cells
16.30 - 16.40	57	Suhatri	Protection Effect of Ethanol Extract of Noni Fruit on Endothelial Cell Dysfunction Induced by Sodium Chlorida on White Male Mice

Oral Presenter
Session 1
Thursday, July 5, 2018
15.00 - 17.30 WIB
Room B

Time	ID	Presenter	Title
15.00 – 15.10	230	Henny Lucida	A Study on the Acute Toxicity of Quercetin Solid Dispersion as a Potential Nephron-protector
15.10 – 15.20	41	Poppy Anjelisa Zaitun Hasibuan	The Antiproliferative and Pro-Apoptotic Properties of Plectranthus amboinicus, (Lour.) Spreng. Ethanolic Extract Nanoparticles on T47D Cell Line
15.20 – 15.30	203	Muthi Ikawati	Histomorphomotry Analysis of Aorta Isolated from HtrA1, HtrA3, and HtrA1;HtrA3 Knockout Mice
15.30 – 15.40	275	Nurhayati	Blood cholesterol of Chicken Fed Ration Containing Fermented Pineapple Peel and Medicinal Weeds
15.40 – 15.50	167	Isti Daruwati	Optimization of iodine-131 labeled interferon alfa-2a-human serum albumin (131I-rhIFNα2a-HSA) for alternative therapy of liver cancer
15.50 - 16.00	257	Endang Lukitaningsih	Anti-aging activity of fruit flesh and fruit Peel of langsat extracts (Lansium domesticum Corr) in vitro
16.00 – 16.10	172	Annisa Khumaira	Naringenin Inhibits Colony Formation and Mammosphere Forming on Mammosphere from MCF-7 Cells
16.10 – 16.20	213	Fitrianingsih,	Antimicrobial potency of durian rind extracts (Durio zibethinus) on some microbes test in vitro
16.20 – 16.30	202	Irfani Aura Salsabila	Optimization Formula of Alpinia galanga L. Extract, Piper nigrum L. Extract and its Cytotoxic Effect on 4T1 cells

16.30 - 16.40	221	Indri Maharini	in vitro determination of sun protection factor (SPF) of leaf extract dadap serep (Erythrina subumbrans (HAKS.) Merr.)

Oral Presenter
Session 1
Thursday, July 5, 2018
15.00 - 16.30 WIB
Room C

Time	ID	Presenter	Title
15.00 – 15.10	211	Tazyinul Qoriah Alfauziah	Development of ternary solid dispersions with HPMCP and PVP K30 for improving dissolution rate of glibenclamide
15.10 – 15.20	228	Debby Evrya Ariesy	The White-Comiskey heroin epidemic model revisited
15.20 – 15.30	236	Erizal Zaini	Preparation of Binary System of Usnic Acid-Saccharin with Improved Dissolution Rate
15.30 – 15.40	229	Rina Wahyuni	Preparation and characterization of usnic acid-PVP K 30 solid dispersion
15.40 – 15.50	240	Adik Ahmadi	Preparation and Characterization of Usnic Acid Nanocrystal with PVP K-30 using Wet Milling Method
15.50 - 16.00	76	Sparisoma Viridi	Simulation of Drug Release Process using Grid and Granular based Model with Three.js and JavaScript: A Comparison between Two Approach
16.00 – 16.10	227	Rini Agustin	Physical Behavior of Chitosan Hydrogels Liquid Crystal and Film for Pharmaceutical Application : Preliminary Studies by Polarization Microscopy and X-Ray Diffraction
16.10 – 16.20	231	Nuning Damayanti Adisasmito	The Well Design Functions Shall be Accordance with Pharmaceutical Products
16.20 – 16.30	62	Abdullah Munzir	The Technical Efficiency Performance of Mariculture Production Operated by Small Fishermen in South Coast District, West Sumatra Province, Indonesia
16.30 - 16.40	223	Deni Noviza	The Effect Of Milling Process to Penetration of Acyclovir Cream

Oral Presenter
Session 1
Thursday, July 5, 2018
15.00 - 17.30 WIB
Room D

Time	ID	Presenter	Title
15.00 – 15.10	287	Abu Amar	Influence of soybean milk addition and homogensization time on physical chemical and sensorial properties of Saga bean milk (Adenanthera pavonina. L)
15.10 – 15.20	43	Dame Peto Marsela Banurea	Vis-NIR Diffuse Reflectance Spectroscopy (DRS) for Melanin Content Estimation: a Solid Phantom Study.
15.20 – 15.30	160	Rizky Juwita Sugiharti	Physicochemical characterization of 99mTc-rutin as radiotracer for the development of cancer drugs from natural products
15.30 – 15.40	250	Elfahmi	Insertion of Artemisinic Aldehyde Δ11(13) Double Bond Reductase (Dbr2) into pCAMBIA 1303 harboring Gen Silencing Supressor (P19)
15.40 – 15.50	279	Atmanto Heru Wibowo	Hybrid Coating Material from Natural Product Base of Polypropylene Itaconate and Silicate
15.50 - 16.00	83	Khuusnul Yaqin	Potential Use of Simple Biomarkers to Detect Toxicity of Small Concentration of Metal
16.00 – 16.10	166	Puji Widayati	Interpretation of conformity test results of PSA levels between CRRT NNEA kit and Hungarian Izotop commercial kits on cancer and non-prostate cancer cases
16.10 – 16.20	185	Ridho Asra	Application of High Performance Thin Layer Chromatography - Densitometry and UV - visible Spectrophotometry for The Simultaneous Determination of Thiamine in Green Beans
16.20 – 16.30	198	Sestry Misfadhila	Comparative study of the eggshell and the activated carbon adsorption capacity ratio to the lead metal contamination
16.30 - 16.40	146	Fithriani Armin	Agarose isolation from agar and its application as an adsorbent in analysis of cholesterol and low density lipoprotein in duck egg yolk

Oral Presenter
Session 2
Friday, July 6, 2018
08.00 - 10.00 WIB
Room A

Time	ID	Presenter	Title
08.00 – 08.10	77	Trina Ekawati Tallei	Isolation and characterization of bile-salt hydrolase (BSH) producing lactic acid bacteria (LAB) from fermented red cabbage
08.10 – 08.20	96	Asadatun Abdullah	Antioxidant and Natural UV Protector Compounds from Indonesian Brown Seaweeds Biopigments as Cosmeceuticals Ingredients
08.20 – 08.30	39	Nur Ajijah	Microalgae cultivation in palm oil mill effluent (POME) to produce carotenoid and lipid
08.30 – 08.40	192	Rohmad Yudi Utomo	Boron Microdistribution and Radiobiological Evaluation of Pentagamaboronon-0 and Its Complex on Several Types of Breast Cancer Cells
08.40 – 08.50	200	Ega Hida Prabowo	In Vitro and In Silico Chemical Activity Test of Combination Ethanolic Tea Leaf Extract (Camellia sinensis) and Mandarin Orange Peels (Citrus reticulata) on Breast Cancer Cells MCF-7
08.50 - 09.00	69	Chaidir	Isolation and characterization of protease produced isolate from Tembang fish (Sardinella fimbriata)
09.00 – 09.10	72	Yanti Rachmayanti	Potential of Indonesian Marine Microalgae Porphyridium sp. for Health Care and Cosmetic Supplement
09.10 – 09.20	102	Siswa Setyahadi	Isolation and Identification of Active Compounds from Soursop Leave (Annona muricata Linn.) as Acetycholinesterase Inhibitor
09.20 – 09.30	278	Ocky Karna Radjasa	Biological Activity of Microbial Symbionts of Marine Invertebrates
09.30 - 09.40	60	Widya Elisa	Antibacterial activity of penicillium oxalicum (wr3) extract cultivated on four different growth media

Oral Presenter
Session 2
Friday, July 6, 2018
08.00 - 10.00 WIB
Room B

Time	ID	Presenter	Title
08.00 – 08.10	151	Anita Sukmawati	Cytotoxic Activity of Modified Chitosan Nanoparticle Containing Combination Doxorubicin and Curcumin Analogue
08.10 – 08.20	174	Haryoto	Cytotoxic activity of ethanolic extract from sugar-apple (Annona squamosa L.) stem bark ON T47D cells
08.20 – 08.30	175	Erindyah Retno Wikantyasning	Cytotoxic activity of zerumbone-loaded chitosan-oleic acid nanoparticles
08.30 – 08.40	218	Fatma Sri Wahyuni	Cytotoxic Evaluation of alfa Mangostin in Human Leukocyte Cell Culture in Vitro and Their Antioxidant Activity
08.40 – 08.50	260	Carolina Willisca Chandra	Cytotoxic test of tinocrisposide and freeze-dried aqueous extract of Tinospora crispa against human leucocyte cell culture by in vitro method
08.50 - 09.00	106	Triana Hertiani	Immunomodulatory Potencial of Faloak (Sterculia quadrifida R.Br) Bark Extracts
09.00 – 09.10	243	Akrom Akrom	Black cumin seed oil increased the number of CD4 th and decreased the number of CD4CD25 Treg lymphocytes in SD rats induced dimethylbenzantracene
09.10 – 09.20	254	Yufri Aldi	The effect of tapak liman leaf (Elephantopus scaber Linn) on the activity and capacity of phagocytosis macrophage cell and percentage of leukocyte cells of male mice white
09.20 – 09.30	97	Pratiwi Apridamayanti	The Usages of Traditional Medicinal Plants of Dayak Semuh Ethnic As Antioxidant, Analgesics And Antiinflammatory Agents

09.30 - 09.40	256	Mediola Dwi Novida	In-vitro hemolytic and anti-inflammatory activity test of tinocrisposide and freeze-dried aqueous extract of Tinospora crispa stem on human red blood cell (HRBC)

Oral Presenter
Session 2
Friday, July 6, 2018
08.00 - 10.00 WIB
Room C

Time	ID	Presenter	Title
08.00 – 08.10	84	Abraham Simatupang	The Prescribing Pattern and the Doctor's Consultation to the Pharmacist in terms of Prescribing
08.10 – 08.20	25	Mayetti	Polymorphism of Angiopoietin 2 (ANGPT-2) Gene in Children with Dengue Viral Infections in West Sumatra
08.20 – 08.30	113	Nelly Suryani Djamain	Analysis of Administrative, Pharmaceutical and Clinical Aspects Review of Outpatients' Prescriptions at RSUD South Tangerang City and Private Hospital (RS X) on January 2017
08.30 – 08.40	122	Oki Nugraha Putra	Expanded-Spectrum Beta Lactamase-Producing Klebsiella pneumonia Infection in a Patient on Scald-Burn Injury with Hospital-Acquired Pneumonia
08.40 – 08.50	135	Rifki Febriansah	Effect of Ethyl Acetate Extract of Noni (Morinda citrifolia L.) and 5-Fluorouracil Compound as Combinational Therapy on WiDr Colon Cancer Cell Lines : In Vitro Study
08.50 - 09.00	210	Armenia	Health Related Quality of Life and Blood Pressure Control of The Diuretic Treated Patient With Congestive Heart Failure at The Yos Sudarso Private Hospital Padang
09.00 – 09.10	219	Yelly Oktavia Sari	Evaluation of Antibiotic Usage among Diabetic Foot Ulcer Patients in Internal Medicine Ward of Dr. M. Djamil Padang Hospital
09.10 – 09.20	109	Dedy Almasdy	Exploring the HIV/AIDS Patients in a Private Hospital in Padang, Indonesia: Patients Characteristic and Medicines Use Evaluation
09.20 – 09.30	64	Raden Sunita	C-reactive protein as predictor of diabetes melitus type 2 risk in children of obesity
09.30- 09.40	292	Siska Putri Utami	Compatibility Study between Amikacin, Aminophylline and Cefoperazone-sulbactam with Parenteral Nutrition through Y-site Administration on Neonates

Oral Presenter
Session 2
Friday, July 6, 2018
08.00 - 09.00 WIB
Room D

Time	ID	Presenter	Title
08.00 – 08.10	171	Robi Andoyo	Physicochemical Properties of Denatured Whey Protein Concentrate as Food Texture Controller Produced at Various Heating Time
08.10 – 08.20	266	Khairan Khairan	Green synthesis of sulfur nanoparticles using aqueous extract of garlic (Allium sativum)
08.20 – 08.30	291	Setiarti Sukotjo	The addition of Gelatin in Seaweed (Eucheuma cottonii) Jelly Candy with Cinnamon (Cinnamomum burma) Flavor
08.30 – 08.40	161	M Marlina	99Mo-adsorption Profile of Zirconia-based Materials for 99Mo/99mTc Generator Application
08.40 – 08.50	181	Indah Khoirunn Nisa	Sunlight Exposure-Related Factors and Their Association With Urinary 8-hydroxydeoxyguanosine (8-OHdG) in Female Young Adults
08.50 - 09.00	295	Mohamad Amin	Intellectual Property Rights (IPR): in the framework of the protection of natural resources and creativity have an impact on the economy
09.00 – 09.10	98	Ferisman Tindaon	Heavy metals contamination of selected leafy green vegetables in urban agricultural soils in Medan Indonesia
09.10 – 09.20	286	Faridatul Mukminah	Effect of wood vinegar on growth and yield of Ocra (Abelmoschus esculantus (L.) Moench))
09.20 – 09.30	95	Pindi Patana	Distribution Model of Poisonous Plants as Conservation Effort of Biopesticides Sources in Batang Gadis National Park, North Sumatera

09.30 - 09.40	289	Hairul abral	Bionanocomposite and Its Potential for Medical Application: A review

Oral Presenter
Session 3
Friday, July 6, 2018
15.00 - 17.30 WIB
Room A

Time	ID	Presenter	Title
15.00 – 15.10	108	Tutik Kuswinanti	Trichoderma harzianum, Pleurotus ostreatus, and MO Plus as Biocontrol agents of Pod Rot Disease (Phytophthora palmivora) of Cocoa
15.10 – 15.20	267	Reno Tryono	Transcription factor of Ganoderma boninense
15.20 – 15.30	282	Trimurti Habazar	Induced resistant mechanism by selected rhizobacteria in chili against Ralstonia syzygii subsp. indonesiensis
15.30 – 15.40	273	Asep Ginanjar Arip	Preliminary Study of Antibiotic Potency of Jamaican Cherry Leaf Extract (Muntingia calabura) as Inhibitor of Pseudomonas aeruginosa Bacteria.
15.40 – 15.50	100	Elmi Nurhaidah Zainuddin	Screening of Cultivated Cyanobacteria for Cytotoxicity and Antiviral Activity against Vero-Cell and Herpes Simplex Virus Type-I
15.50 - 16.00	264	Yoga Armeliani	Isolation of agarose from agar and its use as a substitute of growth medium in microbial sensitivity test to antibiotic
16.00 – 16.10	88	Anto Budiharjo	Identification of antibiotic compounds produced by Bacillus altitudinis
16.10 – 16.20	94	Rafika Sari	Evaluation of the antibacterial combination Aquillaria malacencis extract on pathogenic bacteria from ulcus patients
16.20 – 16.30	222	Lili Fitriani	Evaluation of Antibacterial and Antioxidant Activities of Solid Dispersion Usnic Acid – PVP K30

16.30 – 16.40	296	Efri Mardawati	Study of Microencapsulate Characteristics of Ficus lyrata Warb Fruit extract as Antimicrobial Agent

Oral Presenter
Session 3
Friday, July 6, 2018
15.00 - 17.30 WIB
Room B

Time	ID	Presenter	Title
15.00 – 15.10	23	Dian Handayani	Marine-Derived Fungi with Antimicrobial and Anticancer Activities Isolated from West Sumatran Marine Sponge Haliclona fascigera
15.10 – 15.20	188	Rahmad Abdillah	The Activity of Ethanolic Extracts of Piper aduncum, L. on Total Cholesterol, Triglycerides, HDL, and LDL
15.20 – 15.30	196	Rahimatul Uthia	Activity of ethanol extract of Gynura procumbens (Lour) Merr. to glucose level and pancreatic histopathology of white male mice which induced by alloxan
15.30 – 15.40	199	Siska Febdian Nitami	Chemopreventive test of ethanol extract of mandarin orange peels and tea leaves on T47D breast cancer cells with in vitro method and in silico
15.40 – 15.50	234	Helmi Arifin	A study of analgetic effect and subacut toxicity of kitolod leaf (Isotoma longiflora L.) ethanolic extract in male white mice
15.50 - 16.00	246	Sri Oktavia	Anticholesterol activity of kejibeling extract (Strobilanthes crispa Blume)
16.00 – 16.10	50	Yufri Aldi	Haematopoietic activity from ethanol leaf extract of tapak leman (Elephantopus scaber L) on mice.
16.10 – 16.20	133	Nita Etikawati	Cytotoxic Compounds of the Leaves of Polyalthia glauca (Hassk.) Boerl.

16.20 – 16.30	47	Netty Suharti	Cytotoxic Activity of Ethyl Acetate Fraction of Ginger Rhizome Induced by Arbuscular Mycorrhizae Fungi to T47D Breast Cancer Cell Line
16.30 - 16.40	173	Kuswandi	Effect of Mansoa alliacea Ethanolic Extract on Healing Process of Surgical Wounds in Rats

Oral Presenter
Session 3
Friday, July 6, 2018
15.00 - 17.30 WIB
Room C

Time	ID	Presenter	Title
15.00 – 15.10	159	Adam Hermawan	Hesperidin inhibits mammosphere formation from MCF-7 breast cancer cell
15.10 – 15.20	262	Anna Fadhila	Analysis of essential oil from Daucus carota L. seed and its cytotoxicity assay against A375 cell line
15.20 – 15.30	92	Wira Bahari Nurdin	Pharmacokinetics Modeling of Potential Anticancer Agents from Makassar Medicinal Plants
15.30 – 15.40	85	Edwin Setiawan	Synthetizing Trisindoline, a marine natural compound sponges Hyrtios altus (Poléjaeff, 1884) as a newly drug substance against breast cancer
15.40 – 15.50	251	Suseno Amien	Rapid Shoot Multiplication of Three Stevia (Stevia Rebaudiana (Bertoni)) Accession on Different Concentration of Plant Growth Regulator
15.50 - 16.00	290	Noveri rahmawati	Antioxidant and cytotoxic activities methanol extract and pure compound from leaf akar kaik kaik (uncaria cordata (lour.) merr)
16.00 – 16.10	280	Mohamad Amin	Gallic Acid as Natural Bioactive Anti-Autism Compound from Tea (Camelia sinensis) based on LCMS (liquid chromatography-mass spectrometry) and Virtual Screening Analysis
16.10 – 16.20	270	Dwisari dillasamola	Anti-infertility effects test of ethanol extract of date palm fruit (phoenix dactylifera l.) in female mice (mus musculus) compared with propolis.
16.20 – 16.30	214	Lailaturrahmi	Pharmacy students' readiness for interprofessional learning in West Sumatra, Indonesia: A pilot study

16.30 - 16.40	169	Oo Abdul Rosyid	Renewable Energy System for Health Care Facilities at Rural and Remote Areas in Indonesia

Oral Presenter
Session 3
Friday, July 6, 2018
15.00 - 17.30 WIB
Room D

Time	ID	Presenter	Title
15.00 – 15.10	288	Kustiariyah tarman	Antibacterial and antioxidant activities of green alga halimeda spp from seribu island, indonesia
15.10 – 15.20	238	Dwi dinni bakhtra	Antimicrobial and cytotoxic activities of symbiotic fungi isolated from marine sponge plakortis communis
15.20 – 15.30	82	Enih rosamah	The antioxidant potency of leea amabilis herb from east borneo
15.30 – 15.40	277	Adek zamrud adnan	Antimicrobial activity test of tinocrisposide on rifampicin resistant mycobacterium tuberculosis by lowenstein jensen method
15.40 – 15.50	24	Susy saadah	Analysis of abscisic acid, salicylic acid and gaba in several oil palm progenies in drought stress
15.50 - 16.00	124	Fitra fauziah	The effect of ethanol extracts of averrhoa bilimbi l. Leaves to total cholesterol and ldl levels in hypercholesterolemic mice
16.00 – 16.10	247	Marlina marlina	Synovial membrane mesenchymal stem cell (smmscs) for osteoarthritis diseases as alternative medicine
16.10 – 16.20	281	Morina riauwaty siregar	The effect of turmeric enriched feed in preventing liver sturcture alteration due to aeromonas hydrophila infection in pangasius hypopthalmus

16.20 – 16.30	67	Edi wahyu sri mulyono	Natural dye from mangosteen peel extract as a decorative color for anodized aluminum
16.30 - 16.40	271	Maria goretti m. Purwanto	Profilling of shrimp shell hydrolysis product by chitinase from bacillus licheniformis b2

Abstract List

Abstract List

No	ID	Presenter	Title
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2	23	Dian Handayani	Marine-Derived Fungi with Antimicrobial and Anti Cancer Activities Isolated from West Sumatran Marine Sponge Haliclona fascigera
3	24	Susy Saadah	Analysis of Abscisic Acid, Salicylic Acid and GABA in Several Oil Palm Progenies in Drought Stress
4	25	Mayetti Mayetti	Polymorphism of Angiopoietin 2 (ANGPT-2) Gene in Children with Dengue Viral Infections in West Sumatra
5	32	Azizah Nasution	Identification of drug related problems for dengue haemorhagic fever in-patients admitted to dr pirngadi hospital medan
6	35	Eva Sartika Dasopang	Factor affecting the compliance of tuberculosis suffering patients at padang bulan and pekan labuhan primary health care
7	36	Widyah Budinarta	Soil bacteria with strong antifungal activity against ganoderma boninense
8	37	Elfia Neswita	Screening of endophytic antibiotics producing bacteria from breadfruit plants (artocarpus altilis) using 16s rrna and its activity testing
9	39	Nur Ajijah	Microalgae cultivation in palm oil mill effluent (pome) to produce carotenoid and lipid
10	41	Poppy Anjelisa Zaitun Hasibuan	The antiproliferative and pro-apoptotic properties of plectranthus amboinicus, (lour.) spreng. Ethanolic extract nanoparticles on t47d cell line
11	43	Dame Peto Marsela Banurea	Vis-NIR Diffuse Reflectance Spectroscopy (DRS) for Melanin Content Estimation: a Solid Phantom Study.
12	47	Netty Suharti	Cytotoxic Activity of Ethyl Acetate Fraction of Ginger Rhizome Induced by Arbuscular Mycorrhizae Fungi to T47D Breast Cancer Cell Line

No	ID	Presenter	Title
13	49	Febriyenti	Amino acids and fatty acids profiles of Belut (Monopterus albus) water extract
14	50	Yufri Aldi	Haematopoietic activity from ethanol leaf extract of tapak leman (elephantopus scaber l) on mice.
15	54	Eva Decroli	Correlation between malondialdehyde and nerve growth factor serum level in patient with diabetic peripheral neuropathy
16	57	Suhatri	Protection effect of ethanol extract of noni fruit on endothelial cell dysfunction induced by sodium chlorida on white male mice
17	58	Resva Meinisasti	Formulation cream of ethanol extract from daun sirih (piper betle linn) as acne medicine
18	60	Widya Elisa	Antibacterial activity of penicillium oxalicum (wr3) extract cultivated on four different growth media
19	61	Chairani Habibah	Cytotoxic activity of bioactive compound from penicillium crhysogenum (adsh1), an endophytic fungus isolated from mangrove plant scyphiphora hydrophyllacea
20	62	Abdullah Munzir	The Technical Efficiency Performance of Mariculture Production Operated by Small Fishermen in South Coast District, West Sumatra Province, Indonesia
21	63	Desmawati	The relationship of macronutrient intake and physical activity levels with nutritional status in minangkabau adult women
22	64	Raden Sunita	C-reactive protein as predictor of diabetes melitus type 2 risk in children of obesity
23	65	Krisyanella	The influence of purity and sodium chloride content to iodium stability on kitchen salt sale in traditional market of bengkulu city
24	67	Edi Wahyu Sri Mulyono	Natural dye from mangosteen peel extract as a decorative color for anodized aluminum
25	68	Rachmat Mauludin	Impact particle size reduction of quinine (chinchona ledgeriana) and alamanda extract (allamanda cathartica) on various activities by vitro testing

No	ID	Presenter	Title
26	69	Chaidir Chaidir	Isolation and characterization of protease produced bacteria from tembang fish (sardinella fimbriata)
27	70	Endang Lukitaningsih	Development and validation method using reversed-phase high performance liquid chromatography for determination of acyclovir in spiked plasma
28	72	Yanti Rachmayanti	Potential of indonesian marine microalgae porphyridium sp. For health care and cosmetic supplement
29	74	Dytha Andri Deswati	Influence of mulberry leaf extract (morus alba l.) on diuretic activity of male white wistar strain rat
30	76	Sparisoma Viridi	Simulation of drug release process using grid and granular based model with three.js and javascript: A comparison between two approaches
31	77	Trina Ekawati Tallei	Isolation and characterization of bile-salt hydrolase (bsh) producing lactic acid bacteria (lab) from fermented red cabbage
32	78	Arinafril	Industries, tourists, and human activities contribute to water contamination in co to island and bai chay beach, vietnam
33	81	Krisna Murti	Diffuse large b cell lymphoma of left ovarium and borderline serous tumour in right ovarium
34	82	Enih Rosamah	The anti-oxidant potency of leea amabilis herb from east borneo
35	83	Khusnul Yaqin	Potential use of simple biomarkers to detect toxicity of small concentration of metal
36	84	Abraham Simatupang	The prescribing pattern and the doctor's consultation to the pharmacist in terms of prescribing
37	85	Edwin Setiawan	Synthetizing trisindoline, a marine natural compound sponges hyrtios altus (poléjaeff, 1884) as a newly drug substance against breast cancer
38	86	Tatang Tanti Irianti	Anti-tuberculosis activity of extract ethyl acetate kenikir leaves (cosmos caudatus h.b.k) and sendok leaves (plantago major l.) by in vitro test

No	ID	Presenter	Title
39	87	Maria Lucia Ardhani Dwi Lestarii	Development of hesperetin nanocrystals for oral delivery
40	88	Anto Budiharjo	Identification of antibiotic compounds produced by bacillus altitudinis
41	89	Marianti A Manggau	Rational use of intravenous paracetamol in wahidin sudirohusodo hospital
42	92	Wira Bahari Nurdin	Pharmacokinetics modeling of potential anticancer agents from makassar medicinal plants
43	94	Rafika Sari	Evaluation of the antibacterial combination aquillaria malacencis extract on pathogenic bacteria from ulcus patients
44	95	Pindi Patana	Distribution model of poisonous plants as conservation effort of biopesticides sources in batang gadis national park, north sumatera
45	96	Asadatun Abdullah	Antioxidant and natural uv protector compounds from indonesian brown seaweeds biopigments as cosmeceuticals ingredients
46	97	Pratiwi Apridamayanti	The usages of traditional medicinal plants of dayak semuh ethnic as antioxidant, analgesics and antiinflammatory agents
47	98	Ferisman Tindaon	Heavy metals contamination of selected leafy green vegetables in urban agricultural soils in medan indonesia
48	100	Elminurhaidah Zainuddin	Screening of cultivated cyanobacteria for cytotoxicity and antiviral activity against vero-cells and herpes simplex virus type-i
49	101	Elfia Neswita	Screening of endophytic antibiotics producing bacteria from breadfruit plants (artocarpus altilis) using 16s rrna and its activity testing
50	102	Siswa Setyahadi	Isolation and identification of active compounds from soursop leaves (annona muricata linn.) as acetycholinesterase inhibitor
51	106	Triana Hertiani	Immunomodulatory potencial of faloak (sterculia quadrifida r.br) bark extracts

No	ID	Presenter	Title
52	108	Tutik Kuswinanti	Trichoderma harzianum, pleurotus ostreatus, and mo plus as bio control agents of pod rot disease (phytophthora palmivora) of cocoa
53	109	Dedy Almasdy	Exploring the hiv/aids patients in a private hospital in padang, indonesia: Patients characteristic and medicines use evaluation
54	111	Yuni Andriani	Sexual behavior activity fractionation of (polyscias scutellaria (burm.f) merr)
55	112	Sarjiya Antonius	Characterization of crude protease from two isolates of actynomycetes
56	113	Nelly Suryani Djamain	Analysis of administrative, pharmaceutical and clinical aspects review of outpatients' prescriptions at rsud south tangerang city and private hospital (rs x) on january 2017
57	115	Denia Pratiwi	Determination of vitamin c levels kampar citrus (citrus sinensis (l) osbeck) and citrus ponkam (citrus poonensis) with spektrofotometri method and iodimetry method
58	116	Peni Indrayudha	Usp4 modification construct to increase the protein expression and purification
59	117	Lili Indrawati	Potentially inappropriate prescribing in an indonesian elderly population
60	121	Rizki Kurnia Afriyanti	Antibacterial activity of cochliobolus geniculatus (hf12) extract from marine sponge haliclona fascigera cultivated in four different medium
61	122	Oki Nugraha Putra	Expanded-spectrum beta lactamase-producing klebsiella pneumonia infection in a patient on scald-burn injury with hospital-acquired pneumonia
62	123	Eva Maria Widyasari	Preparation of 99mtc-quercetin as cancer radiotracer
63	124	Fitra Fauziah	The effect of ethanol extracts of averrhoa bilimbi l. Leaves to total cholesterol and ldl levels in hypercholesterolemic mice
64	125	Johan Arif	The relation of ancient human health to climate: The case study of batujaya population from west java, indonesia

No	ID	Presenter	Title
65	126	Husnawati Yahya	Utilizing of agriculture waste as pollutant control: A review
66	127	Roslinda Rasyid	Anti-inflammatory activity test of 'kandis acid' stem extract (garcinia cowa roxb) against carrageenan induced female white female
67	128	Hidayah Karuniawati	Rationality of the use of secondary stroke prevention therapy in ischemic stroke patients in education hospital in central java
68	130	Hidayah Karuniawati	Rationality of the use of secondary stroke prevention therapy in ischemic stroke patients in education hospital in central java
69	133	Nita Etikawati, Ratna	Cytotoxic compounds of the leaves of polyalthia glauca (hassk.) boerl.
70	135	Rifki Febriansah	Effect of ethyl acetate extract of noni (morinda citrifolia l.) and 5-fluorouracil compound as combinational therapy on widr colon cancer cell lines : In vitro study
71	146	Fithriani Armin	Agarose isolation from agar and its application as an adsorbent in analysis of cholesterol and low density lipoprotein in duck egg yolk
72	147	Yulianis	Cytotoxic activities extracts and fractions of sansevieria trifasciata leaves with bslt method
73	149	Khairunnisa	Publics' knowledge, perception and belief on antibiotic use in panyabungan, subdistrict mandailing natal, north sumatra
74	151	Anita Sukmawati	Cytotoxic activity of modified chitosan nanoparticle containing combination doxorubicin and curcumin analogue
75	152	Dwi Agustina	Active lifestyle perception among urban adolescent in east jakarta
76	154	Dian Ayu Juwita	Hepatoprotective effect of bee glue in mice induced by carbon tetrachloride (ccl4)
77	158	Yohannes Alen	Sub-acute toxicity and its reversibility of ethyl acetate fraction of cassytha filiformis l. On rat renal function and histology

No	ID	Presenter	Title
78	159	Adam Hermawan	Hesperidin inhibits mammosphere formation from mcf-7 breast cancer cell
79	160	Rizky Juwita Sugiharti	Physicochemical characterization of 99mtc-rutin as radiotracer for the development of cancer drugs from natural products
80	161	M Marlina	99mo-adsorption profile of zirconia-based materials for 99mo/99mtc generator application
81	165	Onny Setyawati,	Identification of adequate nutrients for toddler by means of information system
82	166	Puji Widayati	Interpretation of conformity test results of psa levels between crrt nnea kit and hungarian izotop commercial kits on cancer and non-prostate cancer cases
83	167	Isti Daruwati	Optimization of iodine-131 labeled interferon alfa-2a-human serum albumin (131i-rhifnα2a-hsa) for alternative therapy of liver cancer
84	168	Zakky Cholisoh	Predictors of medication adherence behavior to secondary stroke prevention therapy
85	169	Oo Abdul Rosyid	Renewable energy system for health care facilities at rural and remote areas in indonesia
86	170	Elwitri Silvia	Serum 25-hydroxyvitamin d (25(oh)d) determinants in female young adults of minangkabau ethnicity
87	171	Robi Andoyo	Physicochemical properties of denatured whey protein concentrate as food texture controller produced at various heating time
88	172	Annisa Khumaira	Naringenin inhibits colony formation and mammosphere forming on mammosphere from mcf-7 cells
89	173	Kuswandi	Effect of mansoa alliacea ethanolic extract on healing process of surgical wounds in rats
90	174	Haryoto Haryoto	Cytotoxic activity of ethanolic extract from sugar-apple (annona squamosa l.) stem bark on t47d cells
91	175	Erindyah Retno Wikantyasning	Cytotoxic activity of zerumbone-loaded chitosan-oleic acid nanoparticles

No	ID	Presenter	Title
92	177	Rahmi Yosmar	Potential Drug Interaction of Oral Hypoglycemic Agents in Type 2 Diabetes Mellitus Patients at Dr. M. Djamil Hospital Padang: A Retrospective Study
93	181	Indah Khoirunn Nisa	Sunlight exposure-related factors and their association with urinary 8-hydroxydeoxyguanosine (8-ohdg) in female young adults
94	185	Ridho Asra	Application of high performance thin layer chromatography-densitometry and uv- visible spectrophotometry for the simultaneous determination of thiamine in green beans
95	186	Riris Istighfari Jenie	Antiproliferation and antimigration activities of pgv-1 on triple negative breast cancer mda-mb-231 cells
96	188	Rahmad Abdillah	The activity of ethanolic extracts of piper aduncum, l. On total cholesterol, triglycerides, hdl, and ldl
97	192	Rohmad Yudi Utomo	Boron microdistribution and radiobiological evaluation of pentagamaboronon-0 and its complex on several types of breast cancer cells
98	196	Rahimatul Uthia	Activity of ethanol extract of gynura procumbens (lour) merr. To glucose level and pancreatic histopathology of white male mice which induced by alloxan
99	197	Regina Andayani	Validation of analysis method and determination of citicoline in tablet dosage form by thin layer chromatography-densitometry
100	198	Sestry Misfadhila	Comparative study of the eggshell and the activated carbon adsorption capacity ratio to the lead metal contamination
101	199	Siska Febdian Nitami	Khemopreventif test of ethanol extract of mandarin orange peels and tea leaves on t47d breast cancer cells with in vitro method and in silico
102	200	Ega Hida Prabowo	In vitro and in silico chemical activity test of combination ethanolic tea leaf extract (camellia sinensis) and mandarin orange peels (citrus reticulata) on breast cancer cells mcf-7
103	201	Rizna Rahmi	Study of urban community understanding of waste disposal and management. Case study : Ie meulee village, sabang, aceh

No	ID	Presenter	Title
104	202	Irfani Aura Salsabila	Optimization formula of alpinia galanga l. Extract, piper nigrum l. Extract and its cytotoxic effect on 4t1 cells
105	203	Muthi Ikawati	Histomorphomotry analysis of aorta isolated from htra1, htra3, and htra1;htra3 knockout mice
106	205	Yoneta Srangenge	Evaluation of antibiotic use pattern on cesarean section patients in obstetric and gynecology department of dr m djamil hospital
107	206	Faradiba Nur Ahlina	Anti-metastatic activity of galangal (alpinia galanga l.) ethanolic extract on 4t1 cells
108	208	Tika Afriani	Evaluation of outpatient prescription compliance in rsi ibnu sina bukittinggi
109	210	Armenia	Health related quality of life and blood pressure control of the diuretic treated patient with congestive heart failure at the yos sudarso private hospital padang
110	211	Tazyinul Qoriah Alfauziah	Development of ternary solid dispersions with hpmcp and pvp k30 for improving dissolution rate of glibenclamide
111	213	Fitrianingsih	Antimicrobial potency of durian rind extracts (durio zibethinus) on some microbes test in vitro
112	214	Lailaturrahmi	Pharmacy students' readiness for interprofessional learning in west sumatra, indonesia: A pilot study
113	216	Marsya Yonna Nurrachma	Anti-migration and anti-invasion activity of piper nigrum l. On 4t1 metastatic breast cancer cells
114	218	Fatma Sri Wahyuni	Cytotoxic evaluation of alfa mangostin in human leukocyte cell culture in vitro and their antioxidant activity
115	219	Yelly Oktavia Sari	Evaluation of antibiotic usage among diabetic foot ulcer patients in internal medicine ward of dr. M. Djamil padang hospital
116	220	Yori Yuliandra	Sub-acute administration of butanolic fraction of Cassytha filiformis L: Reversible nephrotoxicity study in male rats
117	221	Indri Maharini	In vitro determination of sun protection factor (spf) of leaf extract dadap serep (erythrina subumbrans (haks.) merr.)

No	ID	Presenter	Title
118	222	Lili Fitriani	Evaluation of antibacterial and antioxidant activities of solid dispersion usnic acid – pvp k30
119	223	Deni Noviza	The effect of milling process to penetration of acyclovir cream
120	227	Rini Agustin,	Physical behavior of chitosan hydrogels liquid crystal and film for pharmaceutical application : Preliminary studies by polarization microscopy and x-ray diffraction
121	228	Debby Evrya Aries	The white-comiskey heroin epidemic model revisited
122	229	Rina Wahyuni	Preparation and characterization of usnic acid-pvp k 30 solid dispersion
123	230	Henny Lucida	A study on the acute toxicity of quercetin solid dispersion as a potential nephron-protector
124	231	Nuning Y Damayanti Adisasmito	The well design functions shall be accordance with pharmaceutical products
125		Helmi Arifin	A study of analgetic effect and subacut toxicity of kitolod leaf (*isotoma longiflora* l.*)* ethanolic extract in male white mice
126	235	Rinaldi Idroes	Identification and screening of plant based antimicrobial potential in meurah village ie jue (geothermal zone) aceh besar district
127	236	Erizal Zaini	Preparation of binary system of usnic acid-saccharin with improved dissolution rate
128	238	Dwi Dinni Bakhtra	Antimicrobial and cytotoxic activities of symbiotic fungi isolated from marine sponge plakortis communis
129	240	Adik Ahmadi	Preparation and characterization of usnic acid nanocrystal with pvp k-30 using wet milling method
130	243	Akrom	Black cumin seed oil increased the number of cd4 th and decreased the number of cd4cd25 treg lymphocytes in sd rats induced dimethylbenzantracene
131	246	Sri Oktavia	Anticholesterol activity of kejibeling extract (strobilanthes crispa blume)
132	247	Marlina	Synovial membrane mesenchymal stem cell (smmscs) for osteoarthritis diseases as alternative medicine

No	ID	Presenter	Title
133	248	Souvia Rahimah	Application of bioactive compounds in arenga's bark as biopreservative agent to control microbial spoilage of goat fresh cheese
134	249	Ira Oktaviani Rz	Charachterization of pangas bone flour (pangasius hypophthalmus) as calcium and protein source
135	250	Elfahmi	Insertion of artemisinic aldehyde δ11(13) double bond reductase (dbr2) into pcambia 1303 harboring gen silencing supressor (p19)
136	251	Suseno Amien	Rapid shoot multiplication of three stevia (stevia rebaudiana (bertoni)) accession on different concentration of plant growth regulator
137	254	Yufri Aldi	The effect of tapak liman leaf (elephantopus scaber linn) on the activity and capacity of phagocytosis macrophage cell and percentage of leukocyte cells of male mice white
138	256	Mediola Dwi Novida	In-vitro hemolytic and anti-inflammatory activity test of tinocrisposide and freeze-dried aqueous extract of tinospora crispa stem on human red blood cell (hrbc)
139	257	Endang Lukitaningsih	Anti-aging activity of fruit flesh and fruit peel of langsat extracts (lansium domesticum corr) in vitro
140	258	Baharuddin	Induced resistance of banana tissue culture against fusarium wilt and bacterial blood disease
141	260	Carolina Willisca Chandra	Cytotoxic test of tinocrisposide and freeze-dried aqueous extract of tinospora crispa against human leucocyte cell culture by in vitro method
142	262	Anna Fadhila	Analysis of essential oil from daucus carota l. Seed and its cytotoxicity assay against a375 cell line
143	264	Yoga Armeliani	Isolation of agarose from agar and its use as a substitute of growth medium in microbial sensitivity test to antibiotic
144	266	Khairan Khairan	Green synthesis of sulfur nanoparticles using aqueous extract of garlic (allium sativum)
145	267	Reno Tryono	Transcription factor of ganoderma boninense

No	ID	Presenter	Title
146	268	Eliyani	The effect of msg as fertilizer to the plant growth of brassica parakinensis and the msg left in the plant tissue
147	270	Dwisari Dillasamola	Anti-infertility effects test of ethanol extract of date palm fruit (phoenix dactylifera l.) in female mice (mus musculus) compared with propolis.
148	271	Maria G. M. Purwanto	Profilling of shrimp shell hydrolysis product by chitinase from bacillus licheniformis b2
149	273	Asep Ginanjar Arip	Preliminary study of antibiotic potency of jamaican cherry leaf extract (muntingia calabura) as inhibitor of pseudomonas aeruginosa bacteria.
150	274	Yufri Aldi	The activity of elephantopus scaber l. Leaves ethanol extract on the active cutaneous anaphylaxis reaction of white male mice
151	275	Nurhayati	Blood cholesterol of chicken fed ration containing fermented pineapple peel and medicinal weeds
152	276	Uce Lestari	Formulation and effectivity test of deodorant from activated charcoal of palm shell (elaeis guineensis jacg) as excessive sweat adsorbent on body
153	277	Adek Zamrud Adnan	Antimicrobial activity test of tinocrisposide on rifampicin resistant mycobacterium tuberculosis by lowenstein jensen method
154	278	Ocky Karna Radjasa	Biological activity of microbial symbionts of marine invertebrates
155	279	Atmanto Heru Wibowo	Hybrid coating material from natural product base of polypropylene itaconate and silicate
156	280	Mohamad Amin	Gallic acid as natural bioactive anti-autism compound from tea (camelia sinensis) based on lcms (liquid chromatography-mass spectrometry) and virtual screening analysis
157	281	Morina Riauwaty	The effect of turmeric enriched feed in preventing liver structure alteration due to aeromonas hydrophila infection in pangasius hypopthalmus
158	282	Trimurti Habazar	Induced resistant mechanism by selected rhizobacteria in chili against ralstonia syzygii subsp. Indonesiensis (safni et al. 2014)

No	ID	Presenter	Title
159	283	Mohamad Agus Setiadi	Effect of steroid hormone supplementation on development of endometrial cells in vitro after collagenase treatment
160	284	Nur Amin	Isolation and characterization of endophytic fungi from medicinal plant, buah makassar (makassar fruit : Brucea javanica)
161	286	Faridatul Mukminah	Effect of wood vinegar on growth and yield of ocra (abelmoschus esculantus (l.) moench))
162	287	Abu Amar	Influence of soybean milk addition and homogensization time on physical chemical and sensorial properties of saga bean milk (adenanthera pavonina. L)
163	288	Kustiariyah Tarman	Antibacterial and antioxidant activities of green alga halimeda spp from seribu island, indonesia
164	289	Hairul Abral	Bionanocomposite and its potential for medical application: A review
165	290	Noveri Rahmawati	Antioxidant and cytotoxic activities methanol extract and pure compound from leaf akar kaik kaik (uncaria cordata (lour.) merr)
166	291	Setiarti Sukotjo	The addition of gelatin in seaweed (eucheuma cottonii) jelly candy with cinnamon (cinnamomum burma) flavor
167	292	Siska Putri Utami	Compatibility Study between Amikacin, Aminophylline and Cefoperazone-sulbactam with Parenteral Nutrition through Y-site Administration on Neonates
168	293	Rahmi Nofita	Characterization of starch from modified purple sweet potato by gelatination and propilation with microscope polarization
169	295	Mohamad Amin	Intellectual Property Rights (IPR): in the framework of the protection of natural resources and creativity have an impact on the economy
170	296	Efri Mardawati	Study of Microencapsulate Characteristics of Ficus lyrata Warb Fruit extract as Antimicrobial Agent

Abstract

PL-01

The Role of Sphingolipids on Insuline Resistance and ß-cell Dysfunction

Burkhard Kleuser
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Insulin resistance is a complex metabolic disorder in which insulin-sensitive tissues fail to respond to the physiological action of insulin. There is a strong correlation of insulin resistance and the development of type 2 diabetes both reaching epidemic proportions.

The dysfunction of pancreatic ß-cells and the development of insulin resistance are multifaceted with their interdependence for triggering the pathogenesis of type 2 diabetes. The fundamental role of pancreatic ß-cells is to secrete insulin in response to a glucose stimulus, which is essential for maintaining plasma glucose homeostasis. Thus, ß-cells must respond appropriately. An increased metabolic demand for insulin due to insulin resistance in several tissues usually precedes the development of hyperglycemia. But in an early phase pancreatic ß-cells compensate for insulin resistance by hypersecretion of insulin due to modulation of ß-cell function. In this manner ß-cell mass is enhanced by proliferation, neogenesis, hyperplasia and hypertrophy. However, chronic exposure to elevated plasma glucose levels results in the dysfunction of ß-cells and the manifestation of hyperglycemia. The ß-cell failure that follow the period of compensation may result from inadequate expansion of ß-cell mass or failure of existing ß-cells cells to respond to glucose. Thus, ß-cell mass is decreased by cell death through apoptosis, necrosis and autophagy, hypoplasia and hypotrophy.

Dysfunctional lipid metabolism is a hallmark of insulin resistance and numerous studies in humans and rodents have shown that insulin resistance is associated with elevations of non-esterified fatty acids in the plasma. Moreover, it is well established that especially the saturated fatty acid palmitate is disadvantageous in its attitude to influence ß-cell viability compared to fatty acids. This may be explained by the fact that not the fatty acids themselves but secondary metabolites may contribute to the modulation of ß-cell function. Noteworthy, the saturated fatty acid palmitate is required for the *de novo* biosynthesis of sphingolipids. Indeed, sphingolipid metabolites have been postulated as critical mediators of glucolipotoxicity. In particular, ceramides have been identified to contribute to the dysfunction of ß-cells. Nevertheless, ceramides can be further metabolized to the bioactive sphingolipid sphingosine 1-phosphate. It has previously been shown that plasma levels of sphingosine 1-phosphate are increased in animal models of diabetes. Moreover, plasma levels of sphingosine 1-phosphate are also increased in HFD-fed obese mice and more importantly in obese humans., Moreover the sphingosine 1-phosphate content is positively correlated with clinical outcomes of the metabolic syndrome. However, whether sphingosine 1-phosphate seems to be only a biomarker of the metabolic syndrome or whether it possesses a central function in the progression of insulin resistance and type 2 diabetes is still a matter of debate. Here, the current state of knowledge about sphingolipids and insulin signaling in pancreatic ß-cells is presented. A specific focus is put on the action of ceramides and sphingosine 1-phosphate on pancreatic ß-cells. In particular, modulation of sphingolipid signaling can be considered as a potential therapeutic target for the treatment of insulin resistance and type 2 diabetes.

PL-02

Pharmacological Targeting of The First Barrier of The Immune Response

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The family of Toll-like receptors (TLRs) belong to the most prominent group of pattern recognition receptors that form the first barrier in the innate immune response. TLRs activate signaling cascades to induce early inflammatory responses to pathogen- and damage-associated molecular patterns. Inflammatory processes are crucial to the emergence and progression of several diseases such as sepsis, cancer or type I diabetes. Thus, manipulating the inflammatory response through small molecule TLR modulators is a promising strategy to treat these conditions. The development of TLR agonists has been pursued to treat infectious diseases, cancer, and allergies and as adjuvants for new vaccines. Excessive or dysregulated TLR signaling has shown to be a main cause of sepsis, autoimmune diabetes and metabolic syndrome, which has triggered increased interest for the design of TLR antagonists for therapeutic purposes. To date, imiquimod, a TLR7 agonist, is the only small molecule TLR agonist that has been approved by the FDA for the topical treatment of dermatological diseases. Several other small molecule TLR modulators are currently being evaluated in clinical trials for various indications. Still, many candidates have been withdrawn from further studies due to severe side effects or lack of efficacy. In particular, TLR4 inhibitors failed in clinical trials as anti-sepsis drugs although inhibition of lipopolysaccharide-induced overactivation of TLR4 was thought to result in protection against sepsis. This may be at least partially explained by recent findings that LPS is recognized intracellularly in a TLR4-independent manner. In addition, the apparently promising approach of TLR4 inhibition in sepsis ignores the fact that there is an innumerable diversity of Gram-negative as well as Gram-positive pro-inflammatory pathogen-associated molecular patterns inducing, often in parallel, sepsis. Thus, for therapeutic efficacy, drugs need to display a broad spectrum of anti-inflammatory activity for multifaceted infections, as well as sufficient bactericidal activity. Here, recent progress on the development and pharmacological characterization of novel TLR modulators will be discussed. In addition, alternative strategies to inhibit TLR-mediated innate immune responses will be presented focusing on synthetic anti-inflammatory peptides that neutralize bacterial pathogenicity factors such as lipopolysaccharides and lipoproteins.

PL-03

Improving pharmacy practice research: What needs to be done?

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With the technology, changing demographics and disease patterns, use of medicines is changing at a fast pace. Medicines are centric to improve human health outcomes and plays a key role to alleviate morbidity. Pharmacy practice research aims to improve different dimensions of medicines use ranging from medicines compliance, medicines optimization, intervention to improve the use of medicines, optimal pharmacotherapy, issues related to high cost, highly specialized medicines and funding of medicines. Solving these macro and micro level issues could improve patient health outcomes and can enhance the quality of life of the patients. This presentation would discuss barriers, plans and strategies to improve pharmacy practice research in a globalized context. This could range from theories, models, and methodologies in pharmacy practice research. The presentation would also cover enabling factors such as human resources, technology, and strengthening of health systems.

PL-04

Contemporary Approaches to Natural Products for Cancer Chemotherapy and Prevention

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The application of contemporary molecular genetic approaches to study the biosynthesis of bioactive natural products has revolutionized the way drugs are discovered. Using genetically engineered microorganisms, numerous structurally altered complex bioactive natural products have been generated. Over the past two decades, research within our laboratory has focused on the biosynthesis of bioactive natural products and the use of combined genetic, synthetic, and enzymology methodologies to generate novel pharmaceutically important compounds. Using bioassay-guided discovery, biosynthetic engineering, chemo-enzymatic, and synthetic biology approaches, we have generated numerous novel analogs of natural products from several bacterial systems. Some of them have excellent pharmacological/toxicity profiles. Recent progress on these various efforts, particularly those related to cancer chemotherapy and prevention, will be discussed.

PL-05

Cancer ROS Metabolism as A Target for Anticancer Development

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Cancer ROS metabolism is an essential target of anticancer development. Hanahan and Weinberg introduce cancer metabolism as the role of cancer to deregulate cellular energetic. Concept of cancer metabolism is a high metabolism activity in a cancer cell as a consequence of genetic, metabolic and microenvironment-associated alterations resulting in accumulation of Reactive Oxygen Species (ROS). High level of ROS or RCS (Reactive Carbonyl Species) produces reactive aldehydes leading to the damage of cellular macromolecules and induces cellular physiological changes such as authopagy, senescence, apoptosis, and DNA adduct. Various carbonyl-metabolizing enzyme are produced by cancer cells to decrease ROS accumulation on the cancer cells. Therefore, inducing ROS accumulation through inhibition of carbonyl-metabolizing enzyme exhibits as more strategic action than common anticancer mechanism. Several agents are known to possess ROS inductor or pro-oxidant. Doxorubicin and Cisplatin, the common chemotherapeutic agents, induce ROS accumulation on cancer cells then induces apoptosis, G2/M phase arrest, and DNA intercalation. However, Doxorubicin and cisplatin mediated hepatotoxicity, cardiotoxicity, and nefrotoxicity due to unselectiviy of ROS accumulation on normal cells. An unique natural compound, curcumin also has been revealed to perform as pro-oxidant agent. Based on molecular docking study, curcumin occupied the site of NAPDH of CBR1, interacted with glutathione-S-transferase Pi (GST-PI) better than its native ligand, interacted with ALR2 in a closed type of conformation, and interacted with GLO1 through hydrophobic interactions. Curcumin and its analogues (Pentagamuvonon-1 (PGV-1) and Pentagamaboronon-0 (PGB-0)) increased ROS expression on several cancer cells. Potential inhibition study of carbonyl-metabolizing enzyme revealed that curcumin inhibits CBR1, GLO1, NQO1, and ALR2 enzymatic activity. Curcumin was known as a potent inhibitor of GSTs and Prdx-1 is the most abundant protein pulled by curcumin. Study on K562 cells indicating the molecular mechanism underlying antiproliferative activity of curcumin is revealed by interaction to several carbonyl-metabolizing enzymes. Hence, developing agents targeted on cancer metabolism exhibit as a potential strategy of the novel anticancer agent.

Keywords : Cancer Metabolism, ROS, Carbonyl-Metabolizing Enzyme, Curcumin

PL-06

Bioactive Compounds from Sumatran Medicinal Plants

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Sumatra is the fourth largest island in the world and known to be very rich with varieties of tropical rainforest plants. Many of these plants have been used traditionally for centuries for many purposes such as medicines, coloring matters, food, spices, insecticides, and aromatics. Until the 1950s the Sumatran flora was relatively untouched from a scientific point of view. Realizing the danger of losing these Sumatran plants and their related traditional knowledge and culture, our first inventory of Sumatran plants was carried out in my village near Bukittinggi and in Padang in 1982. Later inventories followed in more than 60 different ecotypes of Sumatran forests. Based on these inventories more than 140 flowering plants having traditional medicinal values have been investigated for their chemical constituents, and a number of new and known compounds were isolated.1

In recent years we have continued with collecting trips in Sumatra, with a focus on traditional uses and antimicrobial activities. Extracts were screened against human pathogenic bacteria, eg. *Bacillus subtilis* ATCC 6633, *Enterococcus faecalis* ATCC 29212, *Staphylococcus epidermidis* ATCC 12228 and NTCC 1224, *Salmonella typhosa* NCTC 786, *Streptococcus mutans* ATCC 25175, *Micrococcus luteus* ATCC 10240, *Staphylococcus aureus* ATCC 25923, *Escherichia coli* ATCC 25922 and NTCC 1224, *Salmonella thypimurium* ATCC 14028 and NTCC 12023, and methicilline resistant *Staphylococcus aureus* (MRSA). Phytochemical investigation of selected plants, such as *Piper crocatum* Ruiz & Pav afforded new natural products2, *Oleandra pistillaris* (SW.) C. Chr., and *Trichomanes javanicum* L.3, parasitic plant *Balanophora elongata* Blume, and fern *Sphaerostephanos polycarpus* (Bl.) Copel yielded compounds with strong antibacterial activity. Attempts to conserve these useful Sumatran plants will also be mentioned.

PL-07

Polyalkylcyanoacrylate Nanoparticles as Carrier Systems for Drug Targeting

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In certain disease condition, the normal routes of administration such oral and parenteral are not the most efficient ways of introduction the drugs to human body. The aim of this research is to develop a suitable drug delivery system in the form of nanoparticles, which has ability to carry primaquine (as model drug) to specific targeted organ. Nanoparticles of polyethylcyanoacrylate (PECA) and polyisobutylcyanoacrylate (PIBSA) were prepared by an emulsion polymerization method. The physicochemical properties of nanoparticles were size distribution, drug binding, surface change, drug release and uptake of nanoparticles into the macrophages and the liver cells of rat were investigated. All nanoparticles had an average diameter about 140–330nm and negatively charged surfaces with zeta potentials of 33.93 mV and 40.97 mV for PECA and PIBCA. The amount of drug trapped inside the nanoparticles was found to be dependent on pH, concentrations of drug, monomer and surfactant in the aqueous phase. The results from macrophages culture and in-vivo experiments indicated that the macrophages and rat liver kupffer cells had high affinity for nanoparticles, 56.18% and 54.61% were entrapped in rat liver cells for PIBCA and PECA nanoparticles, respectively. The drug loaded nanoparticles of PACA were shown to increase the amount of drug entrapped in the liver as compared to free drug without carriers. The disappearance of the drug from the nanoparticles in the liver was very much slower and even after 24 hours the concentration was still 40-90 time higher than the free drug. The drug loaded nanoparticles can also decrease the acute toxicity and cause no histological change in the rat liver tissues.

PL-08

Full validation of an immortalized human (hBMEC) *in vitro* blood-brain barrier (BBB) model by both reliable UPLC-MS/MS and QTAP methods and direct application to GABAA receptor modulating piperine analogs

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Cell-based *in vitro* blood-brain barrier (BBB) models have been widely implemented in academia and industry for early prediction of BBB permeation of lead compounds. In this study, we aimed at validating our human *in vitro* BBB model based on the immortalized hBMEC cell line [1] with a spectrum of drugs which are known to cross the BBB to a different extent and with quantitative targeted absolute proteomics (QTAP) approach [2].

Permeability experiments were carried out in the hBMEC monoculture model (24-well inserts from Greiner Bio-one®, transparent PET membrane, 3.0 µm pore size) in apical-to-basolateral direction applying 5 µM of each compound to the donor compartment in parallel to the barrier integrity marker sodium fluorescein Na-F (10 µg/mL). TEER values were recorded real-time with a CellZscope system. Transport studies were performed for 120 minutes with sample collections at 15, 30, 60, 90 and 120 minutes from both compartments. For each positive and negative control drug, specific quantitative UPLC-MS/MS methods were developed and validated according to current regulatory guidelines for industry (FDA, EMA) [3, 4].Endothelial permeability coefficients (Pe) for positive and negative control compounds were calculated and compared to the Pe values for Na-F [5].

For further validation of the model we assessed, by means of quantitative targeted absolute proteomics (QTAP), the protein expression levels in hBMEC cells of ten selected transporters, for comparison after normalization with BBB models involving primary isolated human brain microvessels, human umbilical vein endothelial cells (HUVEC), and immortalized human brain microvascular endothelial cell line (hCMEC/D3). These transporters were further confirmed by RT-PCR and Western blot analysis [6]. After validation of the human BBB model,

several examples of GABAA receptor modulating piperine analogs with promising *in vitro* activity were evaluated for their ability to pass the BBB [7].

PL-09

Manuscript Writing: Skills, Ethics, Craft and Misconducts

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Abstract: Research is the main source of knowledge and guiding light for the future development in each and every field with no exception. Therefore, research paper writing is a very important aspect of any research and requires lot of skill, craft, precautions and intelligence. It's not just presentation of factual data but also an important account on any topic with impressive presentation and authentic discussion. It also needs to convey any new finding or observations in such a way that the future researchers may refer it as and when required for confirmation and verification of the results. But nowadays in the edge of fast growing technological developments and accessibility of each 'Search& Find' tools, people have started taking shortcuts in research paper writings and other scientific publications. Intentional Negligence in the acknowledgement of previous work, Deliberate fabrication of data one has collected and deliberate omission of known data that does not agree with the hypothesis are very common practices nowadays, which is very alarming situation and not only spoils one's career in no time but also harms the scientific community at large. Therefore, such ethical misconducts are very serious concern and addressing them rightly is very much required now. In the present article, we are trying to discuss how to deal with ethical issues at the time of writing a scientific manuscript? How to take preventive measures against the sensitive issues like Plagiarism? What is the importance of DOI, impact factor, i10 index, h-index, Citations etc? How to identify 'Predatory Journals'?

Keywords: research, ethical misconducts, plagiarism, predatory journals, impact factor, h-index, i10-index, citation.

PL-10

Potensi Industri Kosmetik di Indonesia Serta Peranan Apoteker di Industri Kosmetik

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Industri Kosmetik merupakan salah satu industri andalan dalam Skema Pembangunan Nasional (UUD N0. 3/2014 RIPIN 2015 – 2035). Pasar kosmetik di Indonesia mencapai $ 3,257 Juta atau 23,26% dari Pasar Asean, dengan urutan kedua setelah Thailand. Pasar yang besar ini menjadikan industri kosmetik sebagai salah satu aspek yang dapat memajukan perekonomian Indonesia.

Kondisi saat ini, perusahaan multinasional masih memenangkan pasar face care, tetapi dari 55 pemain dalam kategori tersebut, hanya sedikit perusahaan yang dapat mempertahankan dan meningkatkan market share-nya disaat yang lain mulai melemah. PT. Paragon adalah salah satu perusahaan lokal yang masih mampu meningkatkan market share-nya di industri kosmetik. Isu utama industri kosmetika nasional antara lain kurangnya kompetensi dan produktivitas SDM, bahan baku yang digunakan hampir 90% berasal dari luar negeri, kurangnya riset dan inovasi, biaya tinggi dan aksesibilitas yang terbatas dalam pendistribusian produk, serta nilai ekspor yang rendah dan eksplorasi pasar yang belum optimal.

Tenaga professional yang kompeten di bidang Farmasi sangat diperlukan untuk menangani isu yang tengah terjadi di industri kosmetik, karena industri kosmetik dituntut untuk bertanggung jawab penuh untuk menghasilkan produk yang baik. Apoteker memiliki beberapa peranan penting dalam industri kosmetik, diantaranya : berperan dalam proses pengembangan produk, pemilihan bahan baku dan kemasan, penanggung jawab proses produksi, penanggung jawab proses quality control, memastikan produk sudah terdaftar (sudah dinotifikasi) sebelum beredar ke pasar, serta melakukan pemantauan monitoring efek samping kosmetik selama ada di pasaran. Apoteker juga dapat berperan dalam mengkomunikasikan suatu produk kosmetik karena mengerti formula dan klaim yang dapat digunakan untuk pemasaran.

Kata Kunci : Industri Kosmetik, Peran Apoteker, Isu Industri Kosmetik. Paragon

ID-21

Development and Validation of Bisoprolol Fumarate Analysis Method in Tablets with Absorbance Method and Area under Curve Method by Using Ultraviolet Spectrophotometry

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Two simple, accurate and selective ultraviolet spectrophotometry methods have been developed and validated for the determination of bisoprolol fumarate in tablets. Development was conducted to select the solvents and two methods used. The solvent used was distilled water, methanol, 0.1N sodium hydroxide, 0.1N hydrochloric acid and the mixture of distilled water and acetonitrile (65 : 35). While the method developed was a method of the area under curve and method of absorbance. These methods were used to determine bisoprolol fumarate level in samples Biscor® (PT Dexa Medica) and Bisoprolol Fumarate generic (PT Dexa Medica). The results showed that the best solvent was the mixture of distilled water and acetonitrile (65:35). The maximum wavelength of bisoprolol fumarate absorbance in the mixture of distilled water and acetonitrile (65:35) was 270.40 nm. Determination of bisoprolol fumarate level by the method of the area under the curve was performed at a range of wavelengths between 249.80 to 290.00 nm. Validation of analytical methods showed that both of these methods have suitably qualified the requirements of validation parameters. The levels of bisoprolol fumarate in tablets showed the suitably with the requirement of Indonesian Pharmacopoeia 5th edition that is 90-105 %.

Keywords: bisoprolol fumarate; absorbance method; area under the curve method; ultraviolet spectrophotometry

ID-23

Marine-Derived Fungi with Antimicrobial and Anti Cancer Activities Isolated from West Sumatran Marine Sponge Haliclona fascigera

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Marine sponges are well known to be the host for a large community of microorganisms, which comprise a significant percentage (up to 50-60%) of the biomass of the sponge host. The role of these diverse microbes in sponge biology varies from source of nutrition to mutualistic symbiosis with the sponge. Symbiotic marine microorganism in sponge was assumed to be the original producers of the potential of biologically active metabolite and structurally unique compounds. This research is focused on the discovery, isolation and structure determination of biologically active natural products from marine sponge-derived fungi. The Antimicrobial and cytotoxicity bioactivities of isolated fungi were determined using Agar diffusion method against some pathogenic microbial and MTT assay, respectively. In this study, we have isolated 25 fungi from marine sponge *H. fascigera*. There were 8 isolates of the fungi that considered active to *Staphylococcus aureus* and 1 isolate active to *Candida albicans*. In Brine Shrimps Lethality Test result, all fungal extracts were cytotoxic because of their LC_{50} < 1000 ppm, and ranging from 1 to 335 ppm. While sixteen extracts (80%) were toxic (LC_{50} < 100 ppm) and further tested its cytotoxic activity against HeLa, Widr, T47D and Vero cell lines. This study concluded that marine-derived fungi of marine sponge *H. fascigera* can be developed as a new source of antibiotic and anticancer compounds.

Keywords: *Haliclona fascigera*; antimicrobial activity; anticancer activity

ID-24

Analysis of Abscisic Acid, Salicylic Acid and GABA in Several Oil Palm Progenies in Drought Stress

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Metabolites are key players in signaling environmental stress conditions. This study aims to compare the concentration level of abscisic acid, salicylic acid, and gamma-aminobutyric acid (GABA) among tolerant and susceptible oil palm progenies of drought stress. The experiment was arranged in factorial randomized complete block design consisted of three factors: drought stress (watering and non-watering), progenies (S1, G2, G3, G4, G5 and G6), and duration of treatments (0, 7 and 14 days). The samples were taken from leaves and roots tissues. The result showed that abscisic acid, salicylic acid, and GABA were significantly elevated in leave samples of tolerant progenies at 7-days of non-watering treatment. However, abscisic acid, salicylic acid, and GABA were not significantly produced in roots samples of tolerant progenies at 14-days of non-watering treatment.

Keywords: abscisic acid; drought; GABA; oil palm; salicylic acid

ID-25

Polymorphism of Angiopoietin 2 (ANGPT-2) Gene in Children with Dengue Viral Infections in West Sumatra

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Clinical manifestations of dengue virus infection vary widely, ranging from a symptomatic to dengue shock syndrome (DSS). Several studies have shown genetic influence on the disease severity due to dengue virus infection, which caused by the integrity of vascular endothelium. No studies have been documented of ANGPT-2 gene in dengue virus. This study aims to determine ANGPT-2 gene polymorphism in children with dengue virus infection in West Sumatra.

The study was an observational cross sectional of 108 children in West Sumatra were grouped in accordance with the severity of dengue infection according to WHO 2011, dengue fever, dengue hemorrhagic fever, and dengue shock syndrome. DNA isolation using Mini Kit genomic DNA. Polymerase chain reaction and DNA sequencing using 2 Exon 4-F primers, include forward 5'-CACCCATATCCCACCTATCCT-3' and reverse 5'-TGCCCAGTCTCATCCTTCTA-3' primer. Primer synthesized by Integrated DNA Technologies, Singapore.

ANGPT-2 gene polymorphism found in 8 of 10 SNPs, mutation found mostly in Exon 4 rs3020221 G/A (35.18%). Newly discovered SNP (4c.46981), located at 232th order base, converted lysine amino acid into glutamate. ANGPT-2 gene polymorphism found in children with dengue virus infection in West Sumatra. Polymorphism was found in 8 of 10 SNPs, and 1 new SNP found was 4c.46981.

Keywords: dengue virus infection; polymorphism; ANGPT-2

ID-32

Identification of Drug Related Problems for Dengue Haemorhagic Fever In-Patients Admitted to Dr Pirngadi Hospital Medan

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Dengue Hemorrhagic Fever (DHF) is an infection caused by group B *antrhopod-borne virus* (arbovirus). As one of tropical countries, Indonesia has population with a high chance of infection and need intensive care. The purpose of this study was to analyze Dug Related Problems (DRPs) in-patients with DHF admitted to Dr Pirngadi Hospital Medan period June 2016 – December 2016. This descriptive retrospective cross–sectional study assessed the data from medical records of in-patients with DHF (n=54) admitted to Dr Pirngadi Hospital. The DPRs occurred were analyzed based on Pharmaceutical Care Network of Europe (PCNE) version 7.0 and World Health Organization Guideline for Diagnosis, Treatment, Prevention and Control of DHF. The results showed that there were 22 DRPs occurred, 15 cases (68.18%) drug without indication, 1 case (4.54%) drug to drug interaction, 5 cases (22.7%) untreated medication and 1 case (4.54%) too many drugs were given. The present study indicated that the occurrence of DRPs was still high in Dr. Pirngadi Hospital Medan for in-patients during June 2016 – December 2016.

Keywords: inpatients; DHF; DRPs; PCNE

ID-35

Factor Affecting The Compliance of Tuberculosis Suffering Patients at Padang Bulan and Pekan Labuhan Primary Health Care

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Indonesia as the second country with the most tuberculosis patients in the world that is as much as 10% of the total TB cases in the world. To achieve the success of the treatment required compliance treatment for every patient. Therefore it is important to know about the level of adherence as well as the factors that influence TB treatment adherence.

The type of this research is explanatory research with cross-sectional approach which aims to explain how the influence of characteristic, knowledge, attitude, ease for getting health service, availability of anti-tuberculosis drugs, attitude of health officer, and motivation from family to compliance of TB treatment at Padang Bulan and Pekan Labuhan Primary Health Care in 2017. The population of this study is all patients with tuberculosis who still actively undergoing treatment. Sampling is done by total sampling. Data analyzed by using the chi-square method.

The results showed the variables of education and family motivation had significant influence on the medication adherence of tuberculosis patients with p <0,05 at Padang Bulan (p=0,010) and Pekan Labuhan (p=0,018) and family motivation at Padang Bulan (p=0.0001) and Pekan Labuhan (p=0,010). While other variables have no significant relationship.

Keywords: influencing factors; tuberculosis; medication adherence; primary health care

ID-36

Soil Bacteria with Strong Antifungal Activity Against *Ganoderma boninense*

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Basal stem rot (BSR) is a major disease of oil palm (*Elaeis guineensis*) that is caused by *Ganoderma boninense*. Crop yield can be severely affected by BSR and loss up to 45% has been reported. The use of chemical fungicide to control BSR poses some problems, such as fungicide resistance, accumulation of toxic residue to environment, and damage to the beneficial soil microorganisms. Beneficial, fungal-antagonist microbes can be a potential, more environmentally-friendly alternative to control BSR. This study aims to screen soil microbe for antifungal activity against *G. boninense* and to identify the antifungal compounds.

A number of bacteria showing antifungal activity were isolated from soil in Permata Hijau Pasaman (PHP) Plantation, Padang and Taman Hutan Raya, Bandung. A total of eighteen isolates were selected and tested against *Ganoderma* strain B29. PHP12, an isolate with the strongest antifungal activity was identified as *Burkholderia stagnalis* based on 16S rRNA. PHP12 exhibited broad antifungal activity against various pathogenic fungi. The cell-free extract obtained from ammonium sulphate precipitation showed the presence of antifungal activity in fractions with the ammonium sulfate concentration of 20, 40, 60 and 80% w/v indicating the presence of multiple antifungal compounds. These fractions will be further purified using high-performance liquid chromatography (HPLC) and analyzed with mass spectrometry (MS) to identify the compounds.

Keywords: *Ganoderma*; *Burkholderia*; antifungal activity

ID-37

Screening of Endophytic Antibiotics Producing Bacteria from Breadfruit Plants (*Artocarpus altilis*) Using 16s Rrna and its Activity Testing

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The screening of endophytic antibiotic producing bacteria from breadfruit plants (*Artocarpus altilis*) using 16S rRNA and its activity testing has been carried out. The screening was performed using experimental method including endophytic bacterial isolation, and bacterial identification molecularly using 16s rRNA. Furthermore, activities of the isolated bacteria were tested using agar diffusion method. 13 tested bacteria were *Streptococcus mutants* ATCC 25175, *Bacillus subtilis* ATCC 6633, *Vibrio chlorea* Inaba, *Escherichia coli*ATCC 25922, *Enterococcus faecalis* ATCC 29212, *Micrococcus luteus* ATCC 10240, *Pseudomonas aeruginosa* ATCC 27853, *Staphylococcus epidermidis* ATCC 12228, *Salmonella typhimurium* ATCC 14028, *Salmonella thyposa* NCTC 786, *Salmonella thypii, Salmonella thypimurium,* and *Methycillin Resistant Staphylococcus aureus* (MRSA). There were two antibiotics producing bacterial founded. Both of isolates obtained have homology 99% against *Pseudomonas psychrotolerans* strain AP9-27B and *Pseudomonas oryzihabitans* strain AF31. Results showed that both of isolated bacteria were able to inhibit some test bacteria. The further study would be optimization of the fermentation process and their antibiotic activity test.

Keywords: endophytic bacteria; breadfruit (*Artocarpus altilis*); antibiotics; fermentation

ID-39

Microalgae Cultivation in Palm Oil Mill Effluent (Pome) to Produce Carotenoid And Lipid

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Palm oil mill effluent (POME) has high nutrients which is potential to be utilized for cultivating microalgae. This study was conducted to isolate microalgae from POME and utilize the POME as cultivate medium to produce carotenoid and lipid. Microalgae were isolated from POME, then cultivated in POME 20% and Bold's Basal Medium (BBM). Two indigenous microalgae were isolated from POME:*Dictyosphaerium* sp. and *Chlorococcum* sp.. The trend of the growth curve of *Chlorococcum* sp. in POME 20% and BBM medium were similar. The highest cell number of *Chlorococcum* sp. in both medium were achieved at 14th day. The highest cell number of *Dictyosphaerium* sp. was achieved at 14th day in POME 20% medium but at 11th day in BBM medium. The highest of carotenoid was produced by both isolates in POME 20% medium, while the highest of chloropyll a and b were produced by both isolates in BBM medium. The highest of lipid content was produced by *Chlorococcum* sp. in BBM medium.

Keywords: carotenoid; *Chlorococcum* sp.; *Dictyosphaerium* sp.; lipid; microalgae; POME

ID-41

The Antiproliferative and Pro-Apoptotic Properties of Plectranthus amboinicus, (Lour.) Spreng. Ethanolic Extract Nanoparticles on T47D Cell Line

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Plectranthus amboinicus, (Lour.) Spreng. is a plant which has potential as anticancer agents. To enhance the bioavailability of an extract, it is necessary to transformed the extract into nanoparticles. This research aimed to make the nanoparticles of extract and investigated the antiproliferative and pro apoptosis of it on T47D breast cancer cell line.

The extraction with ethanol was done by maceration method. The nanoparticles was prepared by gelatin ionic method. Cytotoxic assay method evaluating the proliferation of T47D cell line (using doubling time) was carried out by using MTT assay. Apoptosis observation was done by flowcytometry assay.

The result showed that treatment with *Plectranthus amboinicus*, (Lour.) Spreng. ethanolic extract nanoparticles (PAEEN) inhibit the proliferation of T47D cell line in 48 and 72 hours incubations in concentration 22.3 µg/mL, 44.6 µg/mL, and 89.2 µg/mL. The viable cells were 93%, 86%, 54% (48 hours) and 98%, 71%, 57% (72 hours), respectively. The nanoparticles of extract also induced apoptosis in concentration ¼ IC_{50} (2.16%), ½ IC_{50} (1.57%) and IC_{50} (2.43%). In conclusion, PAEEN exhibits antiproliferative effect on T47D breast cancer cells via apoptosis.

Keywords: plectranthus amboinicu; (Lour.) Spreng.; antiproliferative; apoptosis; nanoparticles

ID-43

Vis-NIR Diffuse Reflectance Spectroscopy (DRS) for Melanin Content Estimation: a Solid Phantom Study

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Quantitative assessment of skin in terms of melanin content can be obtained by means of Diffuse Reflectance Spectroscopy (DRS). It is well known that DRS is a powerful tool for the analysis of materials ranged from soft- to hard-structured materials. In the field of biophotonics, DRS is a non-invasive and real-time tool for analysis of skin properties. In particular, this report about DRS is extensively extended for the purpose of melanin content measurement within skin mimicking solid and liquid phantom. The Fitzpatrick skin phototype is based on the amount of melanin containing the skin and has been a standard used in the field of dermatology, for instance, as guidance on dose level selection in phototeraphy. In this paper, we proposed new approach for melanin content estimation based on Kubelka-Munk model of human skin and non-linear regression. The experiment included phantom study with melanin as the main absorber and intralipid as the main scatterer. The result of the experiment is reported and analyzed. It can be concluded that our approach is a promising method for near-future skin diagnostic studies.

Keywords: spectroscopy; skin; melanin; diffuse reflectance

ID-47

Cytotoxic Activity of Ethyl Acetate Fraction of Ginger Rhizome Induced by Arbuscular Mycorrhizae Fungi to T47D Breast Cancer Cell Line

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A study to investigate the cytotoxicity activity of ethyl acetate fraction of ginger (*Zingiber officinale* Rosc.) induced with arbuscular mycorrhizae fungi (AMF) against T47D cells line breast cancer cells line. The cytotoxicity of ethyl acetate fraction of ginger was determined using the "microtetrazolium (MTT) Assay", by measuring the activity of mitochondrial dehydrogenase in living cells that have ability to convert pale yellow of dissolved MTT to purple formazan product. The ethyl acetate fraction of ginger used at various concentration (0.1, 1.0, 10 and 100 ug/mL). The level of cytotoxic activity was determined by calculating the inhibitory concentration (IC_{50}) value that was based on the percentage of cell death after 24 hours treatment with the ethyl acetate fraction. The change of cell morphology were observed by using inverted microscope. The statistic results proved that ethyl acetate fraction of AMF induced ginger rhizome could barriers T47D breast cancers significantly at concentrations of 10 ug / ml and 100 ug/mL ug / mL, with IC_{50}value was 3.92 ± 1.11 ug/mL. Results of statistical analysis showed that the ethyl acetate fraction of ginger rhizome induced with AMF at a concentration of 10 ug / ml and 100 ug / ml was able to inhibit the growth of breast cancer cells T47D significantly. The results showed the ethyl acetate fraction of AMF induced ginger rhizome was potential as herbal medicine for cancer-related ailments with IC_{50} value was 3.92 ± 1.12 ug/mL.

Keywords: ginger; AMF; breast cancer; cytotoxicity; MTT assay

ID-49

Amino Acids and Fatty Acids Profiles of Belut (*Monopterus Albus*) Water Extract

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Belut (*Monopterus albus*) is containing amino acids and fatty acids that important to nutrition and medication. The objective of this study is to investigate the amino acids and fatty acids content of *Monopterus albus*water extracts. Amino acids contents were analysed using precolumn derivatization with 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate (AQC) method. Fatty acids in *Monopterus albus* water extracts were esterified using transesterification method to form FAMEs before analyzed using GC. Boron trifluoride-methanol reagent is used for transesterification. The result of the study showed that *Monopterus albus* water extracts contain 15 kinds of amino acids and 9 kinds of fatty acids. The major amino acids in the extract are glycine (5.26 mg/g), alanine (4.39 mg/g), phenylalanine (2.16 mg/g), lysine (1.88 mg/g), proline (1.84 mg/g) and arginine (1.73 mg/g). While the major fatty acids in the extract are oleic acid (192.23 µg/5 g), palmitic acid (184.48 µg/5 g) and pentadecanoic acid (154.03 µg/5 g).

Keywords: monopterus albus; belut; amino acids; fatty acids.

ID-50

Haematopoietic Activity from Ethanol Leaf Extract of Tapak Leman (Elephantopus Scaber L.) on Mice

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E. scaber has been explored for a large amount of salt such as minerals especially iron. *E. Scaber*is well known to have several biological activities, including haematopoietic activity. The present study aimed to investigate the haematopoietic activity of *Elephantopus scaber* L..

Dried and powdered leaves of *E. scaber* was subjected to ethanol extraction. The study was observed for 28 days. The first group of experimental animals used was untreated, the next three groups received 100, 30 and 10 mg/kg ethanol extract of *E. scaber* and the rest fifth group induced with 130 mg/kg of chloramphenicol. Experimental animals induced with chloramphenicol 130 mg/kg on day 1-14 in order to experienced anemia, then the ethanol leaf *E. scaber* extract was given on day 15-28 orally with variant doses. Observations made at day 0, 14, 21 and 28. The parameters that were observed are erythrocytes value, hemoglobin level, reticulocyte value, and hematocrit value.

The results showed that ethanol leaf extract of *E.scaber* given can increase erythrocytes value, hemoglobin level, reticulocyte value, and hematocrit value in white mice after being analyzed with two-way ANOVA, and showed significant results ($P < 0.05$). Ethanol leaf extract *E.scaber* can increase the hematopoietic activity.

Keywords: *Elephantopus scaber* L.; ethanol extract; haematopoietic, erytrocites; hematocrit; hemoglobin; reticulocyte

ID-54

Correlation Between Malondialdehyde and Nerve Growth Factor Serum Level in Patient with Diabetic Peripheral Neuropathy

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To identify the correlation between malondialdehyde (MDA) level with nerve growth factor (NGF) in the serum among patients with diabetic peripheral neuropathy. A cross-sectional study was conducted to observe the inpatients and outpatients diabetic patients in Dr. M. Djamil Hospital, Padang, West Sumatra. Sample size was calculated using a formula to find a single corelation. The serum NGF level was analysed using ELISA method for human nerve growth factor-β. The concentration of MDA was measured using Beuge method with thiobarbituric acid. Peripheral neuropathy was defined when the Michigan Neurophaty Screening Instrument (MNSI) score ≥ 7 and the foot examination score > 2.

Mean score of the thirty subjects for the neuropathy score was 3.53 (± 0.91). The mean of MDA level was 2.16 (±2.89) nmol/ml, while for NGF level was 10.56 (±2.89) pg/dl. There were significant correlations between the MDA and the NGF serum level ($r = -0.037$, $p = 0.044$), the MDA and the neuropathy score ($r = 0.364$, $p = 0.048$) and the NGF level with the neuropathic score ($r = -0.59$, $p = 0.001$).

Malondialdehyde and nerve growth factor have a role in the neuropathy development among diabetes patients, nerve growth factor has a stronger role in the neuropathy development.

Keywords: malondialdehyde; nerve growth factor; diabetic peripheral neuropathy

ID-57

Protection Effect of Ethanol Extract of Noni Fruit on Endothelial Cell Dysfunction Induced by Sodium Chlorida on White Male Mice

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The endothelium layer consists of endothelial cells layer which produce Nitric Oxide (NO), a vasoactive mediator Endothelium Derived Relaxing Factor (EDRF). This molecules is used as Endothelial cell dysfunction indicator, a low level of NO in the body indicate an Endothelial cell dysfunction. In this study, endothelial cell dysfunction in male white mice had been investigated. Endothelial cell dysfunction state was induced by administering Sodium Chlorida (NaCl) 2%. Noni fruit extract that used had met the Herbal Pharmacopoeia requirements. Noni fruit extract was given orally at three different doses (70 mg / kg BW; 140 mg kg BW; and 280 mg / kg BW) for 21 days with NaCl. Level of NO in serum was observed as the study parameter. The results showed that ethanol extract of noni fruit has an endothelial cells dysfunction protection effect, characterized by an increasing of nitric oxide level of concentration in white male mice of the study group compared to the controls group ($P<0,05$).

Keywords: noni fruit extract; endothelial cells dysfunction; sodium chlorida; NaCl, nitric oxyde

ID-58

Formulation Cream of Ethanol Extract from Daun Sirih (*Piper betle* Linn.) as Acne Medicine

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A research on formulation cream of ethanol extract from Daun Sirih (*Piper betle* Linn.) has been done. The ethanol extract was used with concentrations of 5%, 10% and 15%. Formulated cream is a cream with a type of oil in water (M/A). Cream evaluation with several parameters such as organoleptis test, homogeneity test, sticky test, spreading test, protection test and pH test. The evaluation results show that the cream in each formula meets the requirements of the Indonesian Pharmacopoeia. Formulated creams are used for the treatment of acne.

Keywords: cream (M/A); ethanol extract; daun sirih; acne

ID-60

Antibacterial Activity of *Penicillium oxalicum* (WR3) Extract Cultivated on Four Different Growth Media

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Penicillium oxalicum (WR3) is a marine-derived fungus isolated from marine sponge *Haliclona fashigera*. Our previous research results on this fungus obtained 2 antibacterial compounds, culvularin and sydowinin B. In this study, antibacterial activity, the weight of extract, and determination of sydowinin B content from the *Penicillium oxalicum* (WR3) which was cultivated on four different growth media have been analyzed. The fungus was cultivated on Malt Extract Broth (MEB) in seawater, MEB in water, rice in seawater and rice in water for 1 to 6 weeks. Tests of antibacterial activity were performed by agar diffusion method and the determination of sydowinin B was performed by Thin Layer Chromatography (TLC) densitometric method. The highest of antibacterial activity was obtained on cultivation using rice in seawater for 5 weeks. The highest of extract weight was obtained on cultivation using rice in water for 3 weeks. While the highest of sydowinin B amount was obtained on cultivation using rice in water for 6 weeks. Based on the results of TLC analysis, there are differences of spot which was produced each medium. Spots that produced in cultivation using rice were more varied than using MEB. Based on the results, it can be concluded that cultivation using rice in seawater for 5 weeks is the best medium and optimal time for producing antibacterial compounds from *Penicillium oxalicum* (WR3).

Keywords: cultivation media; secondary metabolite; *Haliclona fashigera*; marine sponge; *Penicillium oxalicum*; antibacterial activity

ID-61

Cytotoxic Activity of Bioactive Compound from *Penicillium crhysogenum* (ADSH1), an Endophytic Fungus Isolated from Mangrove Plant *Scyphiphora hydrophyllacea*

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A research on the isolation of cytotoxic secondary metabolites from *Penicillium crhysogenum* (ADSH1) has been done. The cultivation of fungus was conducted on rice in seawater for 40 day. The ethyl acetate extracts of the cultivated fungus was then tested for its cytotoxic activity by using Brine shrimp lethality test (BSLT). The separation of cytotoxic compounds were carried out by flash chromatography and column chromatography. Structure elucidation of isolated bioactive compounds will be established on the basis of detailed analysis of spectroscopic and by comparison with related compounds.

Keywords: *Penicillium crhysogenum*; mangrove *scyphiphora hydrophyllacea*; cytotoxic activity; brine shrimp lethality test

ID-62

The Technical Efficiency Performance of Mariculture Production Operated by Small Fishermen in South Coast District, West Sumatra Province, Indonesia

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The tendency of resource degradation and increasing of fishing cost operation especially for reaching productive fishing grounds have caused difficulties for small fishermen to gain adequate household income. Untill 2011, fishermen in Coastal Rural Sungai Nipah in Subdistrict IV Jurai, South Coast District, West Sumatera Province still received special subsidy from local goverment so-called "raskin". In 2011, the goverment launched mariculture extension program as an alternative income as well as a survival strategy for the fishermen. The study was carried out in Sungai Nipah Village where fishermen practising the mariculture are concentrated.

Data record available of the mariculture production operated by the fishermen between 2011-2015 figured high production fluctuation. It indicates that there is problem in production system managerial.This study aims at analyzing technical efficiency performance of the mariculture production which is important for production system improvement.

The study applied stochastic frontier analytical model using Cobb Douglas production function. The study observed mariculture production of 38 respondents. Several input factors i.e. wide of net pond, seed quantity, labour amount in man day work, and amount of fish food used were selected and analyzed. Software SPSS and Frontier 4.1c were used. The study result showed that the technical efficiency level of mariculture operated by fishermen varied between 0,41 – 0,91. The average value is 0,7556. There is an opportunity to increase production of the mariculture around 24%.

Keywords: Fishermen, mariculture, technical efficiency, stochastic frontier.

ID-63

The Relationship of Macronutrient Intake and Physical Activity Levels with Nutritional Status in Minangkabau Adult Women

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Obesity is a multifactor disease that increased prevalence in the world. This study aims to determine the relationship between macronutrient intake and physical activity levels with nutritional status in Minangkabau adult women.

This research was cross-sectional research, done on 116 Minangkabau women, 40-54 years old. Food intake assessment was done by using food frequency questionnaire (FFQ), physical activity was assessed by using The International Physical Activity *Questionnaires* (IPAQ). nutritional status was calculated based on body mass index. Statistical analysis using one way ANOVA and Chi_Square test with significance level $p < 0.05$.

This research found that most subjects have overweight (30.2%) and obesity (38.8%). The average intake of total calorie was 2012.18 ±737.9 kcal / d, carbohydrate 269.69±104.3 grams / d, fat 64.51±27.8 grams / d, protein 86.6 ±37.3 grams / d, and fiber 13.04±6.4 grams / d. Statistical analysis showed that there was a significant relationship between fat intake with nutritional status ($p = 0.03$), while there was no significant relationship between others macronutrient intake and physical activity levels with nutritional status ($p > 0.05$).

There is a significant relationship between fat intake with nutritional status in Minangkabau adult women.

Keywords: macronutrient; intake; obesity; nutritional status; Minangkabau

ID-64

C-Reactive Protein as Predictor of Diabetes Melitus Type 2 Risk in Children Of Obesity

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Obesity is a low-level chronic inflammatory condition especially in white adipose tissue (WAT). Obesity is characterized by the accumulation of macrophages in WAT tissue and the presence of adipocyte biology and macrophage function against the development of inflammation in adipose tissue. The inflammatory markers of C-Reactive Protein (CRP) are synthesized in the liver under the control of the adle-cose cytokine interleukin-6 (IL-6) in response to various inflammatory stimuli. Cytokines also stimulate the release of leptin from the adipose tissue so that it triggers the brain to produce cortisol. Cortisol causes insulin resistance and obesity. This study aimed to analyze C-reactive protein as a predictor of type 2 diabetes in children. This study is an analytic study with cross-sectional design study conducted in children SD IT Bengkulu City with total sample of 100 samples. Sampling using systematic random sampling method. Collecting data using questionnaires, anthropometric measurements and collection of blood specimens for biochemical examination (CRP). Data were analyzed using statistics. The frequency distribution of the risk of type 2 diabetes in children SD IT with low risk (83%), Medium Risk (16%), High Risk (1%). The frequency of abnormal CRP was higher in BMI not normal compared to normal BMI (10% and 1%). The frequency of normal CRP was lower in BMI not normal compared to normal BMI (30% and 59%). Respondents with normal BMI did not have 19.66 times higher risk for increased CRP compared to respondents with normal BMI (p = 0.000, OR 19.66, 95% CI 2.40 to 160.93). The frequency of abnormal CRP was lower in children at risk of type 2 diabetes compared to children without risk of type 2 diabetes (45.5% and 54.5%) and the frequency of normal CRP was lower in children at risk of type 2 diabetes compared to children without risk type 2 diabetes (14.6% and 85.4%) (p = 0.025). Children that risk of type 2 diabetes had a 4.9 times higher risk for increased CRP compared to children without risk of type 2 diabetes (p = 0.025, OR 4.9, 95% CI 1.29 to 18.32). Respondents with not normal BMI who have a higher risk for an increase in CRP should do individual therapy (examination CRP and lipid profile should be performed four times a year).

Keywords: BMI; child; CRP; obesity

ID-65

The Influence of Purity and Sodium Chloride Content to Iodium Stability on Kitchen Salt Sale in Traditional Market of Bengkulu City

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The stability of iodine in iodized salt is influenced by several factors, including humidity, temperature and storage time type of packaging, purity, moisture content, NaCl content, the metals content especially iron, light, and acidity. These factors are the cause of the decline in the quality of iodized salt for storage, processing and cooking.

This study aimed to analyze the influence of purity and Sodium Chloride content on the iodine stability on kitchen salt sold in the traditional market of Bengkulu city. The study design used is descriptive. Examination in the laboratory qualitatively and quantitatively. Samples are five brands of table salt. First, KIO3 concentration is determined using the method of Uv-Vis spectrophotometry, then the samples were treated at three temperatures: 300; 500 and 1000ºC. The KIO 3 levels before and after heating were compared and determined the percentage decreased levels of KIO3 samples. Furthermore, the qualitative analysis of mineral impurities using color reaction, quantitative analysis of water content by gravimetric method and quantitative analysis of the levels of NaCl with argentometry titration method. Then the relationship percentage decreased levels of KIO3 to moisture, the content of NaCl and mineral content of impurities were analyzed.

There was a significant association between water content with KIO3% loss (ρ <0.050) and a significant relationship between NaCl levels and KIO3% loss (ρ <0.050). The stability of KIO3 content is inversely proportional to the increase in water content and is proportional to the increase of NaCl levels.

Keywords: kitchen salt; purity; NaCl; Iodium

ID-67

Natural Dye from Mangosteen Peel Extract as a Decorative Color for Anodized Aluminum

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The utilization of mangosteen peel extract as a decorative color for anodized aluminum has been studied. The extraction was conducted using Soxhlet method with dried mangosteen peel-ethanol solvent ratio 1:5, 1:10, 1:15, 1:20, 1:30 and 1:50 respectively, with extraction time 30, 45, 60, 90 and 105 minutes. The optimum condition was achieved on the feed-solvent ratio of 1:10 and the extraction time of 60 minutes that gave 14.5% yield. The obtained extract was used as a coloring agent for anodized aluminum. The color of anodize coatings vary depending on the electrolytic process conditions. This process resulted in a yellow to golden brown color that was resistant to heat and acid solution. The microphotograph image showed the thickness of oxide layer formed on the surface of the aluminum was reached 12 um. During anodizing process, the physical and chemical characteristics aluminum surface was change by creating a highly porous film. This highly porous film allowed the aluminum surface to be decoratively colored by absorbing the natural dye that gave the metal more visually appealing in the finished product.

Keywords: Mangosteen peel; natural dye; anodizing; aluminum; decorative color

ID-68

Impact Particle Size reduction of Quinine (*Chinchona ledgeriana*) and Alamanda Extract (*Allamanda cathartica*) on Various Activities by In Vitro testing

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Extract of cinchona and allamanda contains various therapeutic compounds. Dried extract of cinchona and allamanda, which obtained by maceration with ethyl acetate, were formulated in nanosuspension, with the aim of knowing the influence of its particle size reduction to several activity. Nanosuspension was prepared using evaporative precipitation principle, and evaluation against particle size, stability and activity as antioxidant, tyrosinase enzyme inhibitor and xanthine oxidase enzyme inhibitor were performed. The particle size of 0,5 % cinchona extract nanosuspension was 180,4 nm, and the particle size of 0,25 % allamanda extract nanosuspension was 101,3 nm. Stability test revealed that the nanosuspension was stable within 20 days. Antioxidant activity testing was performed by determining IC_{50} from DPPH damping. The IC_{50} value of cinchona extract is 55.2 ± 0.6 µg / ml, the cinchona nanosuspension is 79.8 ± 1.8 µg / ml. The IC_{50} of the allamanda extract is 62.20 ± 4.4 µg / ml, and allamanda nanosuspension is 96, 7 ± 2.7 µg / ml. The IC_{50} value of the allamanda extract is 20.0 ± 1.8 µg / ml and the IC_{50} of allamanda nanosuspension is 22.2 ± 1.1 µg / ml for tryrosinase enzyme inhibitory. The inhibitory value of the tyrosinase enzyme by cinchona extract is 30.1 ± 1.5 %, whereas the nanosuspension inhibition value is 23.4 ± 2.0 %. Then, the determination of the xanthin oxidase enzyme inhibition activity was performed on allamanda extract and allamanda nanosuspension at 100 µg/ml, that is 28,9 ± 2,3% and 67,7 ± 2,3% respectively. Nanosuspension increase xanthine oxidase enzyme inhibitor activity, but it has no effect on antioxidant and tyrosinase enzyme inhibitor activity.

Keywords: nanosuspension; quinine bark extract; allamanda stem extract; antioxidant; tyrosinase enzyme inhibitor; xanthine oxidase enzyme inhibitor

ID-69

Isolation and Characterization of Protease Produced Isolate from Tembang Fish (*Sardinella fimbriata*)

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The present study was undertaken to isolate and characterize the protease producing bacteria from gastro intestinal tract of Tembang fish (*Sardinella fimbriata*). The isolate was characterized morphologically and biochemically and identified based on 16S rRNA as *Strepmyces griseus*. The optimum temperature for the growth for isolate was 37 ^{0}C, but the optimum temperature for protease production was 60 ^{0}C, the optimum pH was 7, in which the isolate produced 0,06 U/ml.

Keywords: protease; Tembang; *Sardinella fimbriata*; *Streptomyces griseus*, pH; temperature

ID-70

Development and Validation Method Using Reversed-Phase High Performance Liquid Chromatography for Determination of Acyclovir in Spiked Plasma

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Acyclovir is an antivirus agent for varicella zoster and herpes simplex infection treatment. Virustatic drugs administered per oral require bioavailability test to ensure systemic availability to achieve the desired effect. This study aims to develop an analytical method for acyclovir determination in spiked plasma by reversed-phase HPLC that fulfills the validation parameters required by the EMA guideline.

The acyclovir is extracted from the blood plasma by protein precipitation using methanol and the isocratic reversed-phase HPLC. As a stationary phase used in this research is cosmosil 5C $_{18}$ – MS – II (250 x 4.6 mm; i.d 5 µm), while as mobile phase is a combination of methanol and KH_2PO_4 0.02 M pH 3.2 containing SDS 1 mM at 1 mL/min flow rate and detected by UV at 252 nm. Vanilin is used as an internal standard.

The validation result described that the method is selective (Rs > 2), accurate (percent error between -7.51 – 4.66% and between 2.09 – 7.61% for the LLOQ, fulfilling the requirement that are <15% and 20% for the LLOQ) and precise (CV of calculated concentration 9.06 – 14.97% and 12.33 – 12.71% for the LLOQ, fulfilling the requirement that are <15% and 20% for the LLOQ). The acyclovir calibration curve is considered linear (r = 0.9992) in accordance with the requirement >0.99 within the range between 0.0496 – 1.1900 µg/mL and LLOQ of 0.0496 µg/mL. Acyclovir is stable in 4 hours and 24 hours after being prepared as well as on freeze and thaw cycle (percent error -12.13 – 13.71% fulfilling the requirement of <15%). The dilution integrity resulted in the percent error of -3.70 – 14.41% (<15% required) and there is no carry over effect observed during the analysis of acyclovir in plasma.

It can be concluded that the developed analytical method can be applied in acyclovir analysis in spiked plasma and bioequivalence studies.

Keywords: acyclovir ; reversed-phase HPLC; spiked plasma; validation; EMA

ID-72

Potential of Indonesian Marine Microalgae *Porphyridium* sp. for Health Care and Cosmetic Supplement

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An Indonesian marine red microalgae has been isolated and identified morphologically under a light microscope and genetically using the LSU D2/D3 marker as a Porhyridium sp. It can grow very well both on the Walne medium and a modified medium (NPK fertilizer 5% (w/v)) with the optimum biomass cell number of 11x10^{6} cells/mL after 8 days and 10 days of cultivation respectively. The potential of Porhyridium sp. for use in health care and cosmetics is studied by characterizing its biopigment content and measuring the value of sun protection factor (SPF) and antioxidant activity of its biopigment extracts. Extraction using organic solvent produced 4 types of biopigment after characterization by TLC, i.e. chlorophyll-*a,* Pheophytin-*a*, *ß*-carotene and Zeaxanthin, meanwhile that of using PBS (Phosphate Buffered Saline) solvent pH 7.4 produced a biopigment phycoerythrin having a molecular weight of 18 kDa based on SDS-PAGE analysis. The SPF value of a lotion containing 0.25; 1.0 and 2.5 %(w/w) of biopigments crude extract was 0.30; 1.16 and 1.78 respectively, which is equivalent to 15; 52 and 60% UV-B detention respectively. The antioxidant activity of biopigments was determined using the reagen of 2,2-diphenyl-1-picrylhydrazyl (DPPH) and presented as the IC_{50} value, i.e. the concentration of antioxidant compounds required to inhibit 50% of free radicals.

Keywords: red microalgae; *Porhyridium* sp.; LSU D2/D3; biopigment; Sun protection factor; antioxidant

ID-74

Influence of Mulberry Leaf Extract (Morus alba L.) on Diuretic Activity of Male White Wistar Strain Rat

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The Mulberry Leaf (*Morus alba* L.) is a traditional medicinal plant that can be used as a diuretic. The aims of this research were to know the diuretic effect of ethanol of mulberry leaves extract of on male white Wistar-strain rats by using Lipschitz method and to know optimal dose of ethanol of mulberry leaf extract as diuretic. In this study, the rats were grouped into 5 groups which each group consisted of 5 rats and then treated. The categorization of the group were : normal PGA group 2%, furosemide compound group 3.6 mg/kgb.wt, dose 1 group extract 140 mg/kgb.wt, dose 2 group extract 240 mg/kgb.wt, and dose 3 group extract 420 mg/kgb.wt. Testing diuretic effect was done by measuring the volume of urine for 6 hours. The result showed that mulberry leaf extract (Morus alba L.) had diuretic effect. Moreover, the effective dose as a diuretic is obtained at dose of 420 mg/kgb.wt.

Keywords: diuretic; extract; mulberry leaf; *Morus alba* L.

ID-76

Simulation of Drug Release Process using Grid and Granular based Model with Three.js and JavaScript: A Comparison between Two Approach

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An oral tablet can be modeled with through approach, which are grid based (GIBA) and granular based (GABA). These two different approach have their own advantages and disadvantages, such as simplicity and neglecting some of physical aspects. In this work a two dimension oral tablet is simulated using grid based and granular based approaches. GIBA requires simpler initial condition than GABA, but it simplify too much interaction forces between tablet parts. Both approach still has discrete decaying steps before part of tablet dissolved completely in the ambient liquid. Results obtained from the simulation are compared to first and second order release kinetics, and also combination of those in the form of $D(t) = c_0 + c_1 t + c_2 t^2 + ..$, where particle-particle interaction can alter the value of c_0, c_1, c_2 and other coefficients.

Keywords: simulation; drug release; granular based; grid based, Three.js; JaavaScript

ID-77

Isolation and Characterization of Bile-Salt Hydrolase (BSH) Producing Lactic Acid Bacteria (LAB) from Fermented Red Cabbage

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Sauerkraut is made by a process called lacto-fermentation to preserve cabbage and to obtain potential probiotics. This study was aimed at isolating and characterizing potential candidate BSH producing lactic acid bacteria (LAB) from sauerkraut using red cabbage (*Brassica oleracea* L. var. capitata f. rubra DC) as the sole substrate in natural fermentation setting. Red cabbage was shredded and incubated in 15% brine to prevent the growth of unwanted pathogenic microorganisms. The fermentation took place for one week. Isolation and purification of LAB were carried out using MRS agar supplemented with 1% $CaCO_3$. Two isolates that exibited clear zone in the media were identified as catalase-negative, Gram-positive bacteria with coccoid-shaped morphology. Due to its ability to grow in 15% brine, they are categorized as moderate halotolerant LAB. The identification of the bacteria using 16S rRNA revealed that the two isolates had 100% identity with *Weissella cibaria*. By the inclusion of 0.5 % taurodeoxycholic acid (TDCA) in MRS agar medium, bile-salt hydrolase activity was identified by formation of halo surrounding the colonies due to precipitation of uncojugated deoxycholic acid. The property of BSH activity exhibited by this bacteria indicated that it has a potential as cholesterol-lowering probiotic strain.

Keywords: red cabbage, halotolerant, lactic acid bacteria, bile-salt hydrolase, probiotic

ID-78

Industries, Tourists and Human Activities Contribute to Water Contamination in Co To Island and Bai Chay Beach, Vietnam

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Clean water has gradually become contaminated by the amount of waste and overexploitation of water resources. Main threat to biodiversity is destruction of ecosystems and habitat of the organism. Water quality is referred to quality of water that safe for human healt status, that considers chemical, biological, physical characteristics of water.

Water quality condition has been studied in two tourist destination places, i.e. Co To Island and Bai Chay Beach, Vietnam, in September to November 2017. Although impacts of industries, tourism and human activities, on the environment have received much attention, there have not been any surveys or classification of major sources of emissions: cruise ship businesses, accommodation establishments and onshore restaurants. Moreover, there is still a lack of comprehensive analysis of different type of wastes (solid waste and liquid waste), their impact on the quality of environment, and human as well.

Study showed that society and people's habits have a non-negligible impact on water quality. There are several aspects that might cause the water and environmental pollutions, such as tourism, waste water management and garbage disposals. If these issues will not be administered right away and properly, negative effects to health, biodiversity and even to tourism industry might occur.

Keywords: water quality; industry, tourism; human activities; environmental pollution

ID-81

Diffuse Large B Cell Lymphoma of Left Ovarium and Borderline Serous Tumour in Right Ovarium

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Primary ovarian non-Hodgkin's lymphoma is rare and account for 1.5% of malignant ovarian neoplasms. It is considered, primary ovarian NHL arises from hilar lymphoid tissue or teratoma in the ovary. The most common type of lymphoma involving ovary is diffuse large B cell lymphoma.

A female patient has bumps in paravertabrae and supraclavicul since 3 months before admission to hospital. Tumors were suspected as ovarial carcinoma advanced stage. Macroscopic examination revealed solid mass of left ovary measuring 10x9x5.5 cm with white color, chewy and partially fragile. Histopathology examination revealed diffusely spread tumour cells, monotonous with coarse chromatin, some tumor cells with opened chromatin. prominent nucleoli, narrow basophylic cytoplasm. Immunostaining showed anti-Ki67 strong positive in almost 100% tumour cells, anti-CD20 immunopositive, anti-BCL6 showed weak, focal positivity and anti-MUM1 immunopositivity in almost all tumour cells. However, CD3, BCL2, and CD30 showed negative staining in tumour cells. Right ovarium has cystic mass measuring 10x7.5x4 cm. Histopathology examination revealed papillary structures and cystic foci lined by 2-3 layers cuboid stratified epithelial with nuclear enlargement, small nucleoli without stromal invasion.

Based on clinical symptoms, histopathology features, and imunohistochemical staining, the mass in left ovary is consistent with diffuse large B cell lymphoma non GC type.

Keywords: Diffuse large B cell lymphoma; lymphoma; ovarii; borderline serous tumor ovarium

ID-82

The Anti-oxidant Potency of *Leea amabilis* Herb from East Borneo

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Indonesia has a mega variety of plants, and many of them are herbs. This needs to be proved, to be developed and to be used to increase the level of healthiness. Bahau ethnic in Matalibaq village in East Kalimantan uses *Leea amabilis* herbs as a medicinal plant especially for diabetic. These herbs need to be validated scientifically. The aims of the research are to analyze the content of phytochemistry, to examine the activity of anti-oxidant potential of *n*- hexana, chloroform, ethyl acetat, and ethanol extracts. Method to measure antioxidant activity of sampel involves the use of the free radical, *1,1-Diphenyl-2- picrylhydrazyl* (DPPH) which was widely used to test the ability of compounds to act as free radical. There were variations of sampel in each solvent with the highest extracts yield of 1.40% produced by ethanol extraxtion. The result of phytochemicals analysis showed that all extracts had alkaloid and flavonoid. The highest antioxidant activity was shown by examination was 80.26% with IC50 value of 2.97µg/ml of *L.amabilis* ethanolic extract. Ascorbic acid as positive control was shown by examination was 95.22% with IC50 value of 3.12 µg/ml. Herbs processing as natural product from *L. amabilis* extracts are needed for anti-oxidant.

Keywords: anti-oxidant; *Leea amabilis*; phytochemistry

ID-83

Potential Use of Simple Biomarkers to Detect Toxicity of Small Concentration of Metal

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Biomarkers are considered as sensitive and appropriate tools to detect contaminants which effects are recorded on a sentinel organism. Research on simple biomarkers has been conducted in the laboratory to detect the toxicity of small concentrations of arsenic by using green mussels, *Perna viridis*, as sentinel organism. The simple biomarkers used are byssogenesis, Stress On Stress (SOS), and Condition Index. Green mussels of 2.5 to 3.5 cm were exposed to concentrations of 0, 0.008, 0.038 and 0.19 mg/L of arsenic for 14 days. The results revealed that byssogenesis was not sensitive to arsenic toxicity in green mussels. The air survival test or Stress on Stress was tested in term of LT_{50} of Kaplan-Meier test. The results showed that LT_{50} for treatments of 0, 0.008, 0.038 and 0.19 mg/L were 3.15, 2.76, 2,63 and 3.03 days respectively. It demonstrated that the air survival of mussels in the control was longer than those were exposed to series of arsenic concentrations descriptively, but statiscally they were not significant different. However, the condition index of the green mussel revealed a significant different statistically between control and 0.19 mg/L of arsenic.This suggested that the condition index can detect the toxicity of arsenic to the green mussel.

Keywords: simple biomarkers, green mussel, byssogenesis, stress on stress, condition index, arsenic

ID-84

The Prescribing Pattern and the Doctor's Consultation to the Pharmacist in Terms of Prescribing

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Prescribing is one of the doctor's competencies and this is a rather complex task regarding not only choosing the appropriate medicine for particular patients with their diagnosis and specific bodily and mentally features. Doctors sometimes consult references like ISO, MIMS, or other drug lists, and or pharmacists for appropriate prescription. We did an online survey, using Google docs, to see the prescribing pattern of doctors and how they consult pharmacists on prescription. Out of 73 respondents from 200 responded the survey. Forty-nine (67.1%) male and 24 (32.9%) female. Fifty-six (76.7%), 12 (16.4%), and 5 respondents (6.8%) have been practicing more than 10 years, 5-10 years and < 5 years, respectively. Thirty-seven respondents (50.7%) see < 20 patients/day. Thirty respondents (41.1%) frequently consult ISO, DOI, etc., and 19 respondents (26%) infrequently consulted references. Lack of available time and lack of updates make physicians rarely see references like ISO, MIMS, and DOI. Fifty-six respondents (76.7%) rarely consult pharmacists. However, with regards to drug consultation, questions on price, drug change, the exact generic name, and drug interactions are the most frequently asked questions by the respondents to the pharmacists. Therefore, to reduce medication-error and increase patient-safety, communication between doctors and pharmacists should be encouraged.

Keywords: prescription; consultation; pharmacist

ID-85

Synthetizing Trisindoline, a Marine Natural Compound Sponges *Hyrtios Altus* (Poléjaeff, 1884) as a Newly Drug Substance Against Breast Cancer

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Trisindoline was discovered in 1994 by Kobayashi *et al*., as a potent bioactive compound of marine sponges *Hyrtios altus* (Poléjaeff, 1884). Several researches have been conducted for testing its capability as an anti-microbial substance. Furthermore, Yo *et al*., 2008 has been started to synthesize Trisindoline for anticancer activity. In this review, we would like to describe a progress on development and modification of our discovered Trisindoline synthetize compound namely S1, S2, S3 and S4 as an anticancer substance against MCF-7 breast cancer cell line, in the Department of Biology and Chemistry, Science Faculty, Institut Teknologi Sepuluh November Surabaya. Our step has just reached on a level of MTT toxicity and a phagocytose cell tests. Further steps, which are cycle cell, immunoblotting, in-vitrio and clinical tests are required to produce a new cancer drug based on this marine sponges' compound.

Keywords: Trisindoline; marine sponges; *Hyrtios altus*; bioactive compound; synthetizing; MCF-7 breast cancer cell line; drug discovery; patent

ID-86

Anti-Tuberculosis Activity of Extract Ethyl Acetate Kenikir Leaves (*Cosmos Caudatus* H.B.K) and Sendok Leaves (*Plantago Major* L.) by In Vitro Test

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The increasing therapy problem including multidrug-resistant tuberculosis (TB) has created to discover a new anti-TB drug candidate. The aim of this study was to know ethyl acetate extracts of kenikir (*Cosmos caudatus* H.B.K) and sendok (*Plantago major* L.) leaves for activity against *Mycobacterium tuberculosis* (*M. tuberculosis*) H37Rv.

This research used Middlebrook (MB) 7H9 media and observed the growth of *M. tuberculosis* using Lowenstein Jensen (LJ) media. The concentration of extracts were 0.25 mg / ml; 0.50 mg / ml and 1.00 mg / ml and the result of this study showed that ethyl acetate extracts exhibited anti-TB activity in 1000 µg/ml of both extracts. The active compound group was detected by thin layer chromatography (TLC) and the separation of compounds was shown by retardation factor (Rf) and the color of the spots. Based on TLC chromatograms, it is known that there are type of ortho-dihydroxy compounds, phenolic compounds and leads to terpenoids compounds for both extracts.

Keywords: tuberculosis, ethyl acetate extract, kenikir (*Cosmos caudatus* H.B.K), sendok (*Plantago major* L.), leaves, *M. tuberculosis*

ID-87

Development of Hesperetin Nanocrystals for Oral Delivery

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Hesperetin is a plant compound which have many potential biological effects such as antiinflammation, anticancer and antiplatelets aggregation. However, similar with many other plant compounds, hesperetin has low solubility and dissolution rate hence cause low bioavailability when given orally. One of the formulation strategies to overcome this problem is drug nanocrystals, which consists of drug crystals in nanometer size stabilized with stabilizing agent. In this research, hesperetin was stabilized with Poloxamer 407 and nanosized by milling with the aid of yttrium stabilized zirconium beads size 0.5 mm at milling speed 900 rpm followed by freeze drying. Two concentrations of Poloxamer 407 were applied: 25% and 50% w/w. Particle sizes obtained were 180 nm and 150 nm for hesperetin-25% w/w poloxamer 407 and hesperetin-50% w/w poloxamer 407, respectively. Solubility study showed that hesperetin-50% w/w poloxamer 407 had higher water solubility compared to hesperetin-25% w/w poloxamer 407. Dissolution study of nanocrystals hesperetin-50% w/w poloxamer 407 showed that hesperetin nanocrystals had higher dissolution rate with 100% release within 120 min compared to hesperetin and physical mixture of hesperetin-50% w/w poloxamer 407. This study demonstrated that formulation of hesperetin nanocrystals could improve its dissolution and might provide better bioavailability of hesperetin.

Keywords: hesperetin, nanocrystals, milling, solubility, dissolution

ID-88

Identification of antibiotic compounds produced by Bacillus Altitudinis

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Bacillus altitudinis P-10 has been isolated from rhizosphere of organic rice farming in Semarang regency. It has been regarded as PGPR due to its ability to support the growth of the plant and protection against phytopathogen. In order to decipher the antibiotic compounds produced by B. altitudinis, FTIR was used to identify the antibiotic compounds. Based on FTIR, the antibiotic produced by B. altitudinis was from peptide group such as bacitracin, gramicidin, surfactin, fengycin and bacillomycin D.

Keywords: *Bacillus altitudinis,* antibiotic compounds, FTIR

ID-89

Rational Use of Intravenous Paracetamol in Wahidin Sudirohusodo Hospital

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Paracetamol (acetaminophen) is one of the most effective and well tolerated drugs by adults and children in therapeutic doses. It is available in many countries as an over the counter drug. But the use of irrational paracetamol drugs can cause drug related problems. The aim of this research was to study the rational use of intra venous paracetamol in Wahidin Sudirohusodo Hospital by looking at the indications and effectiveness of paracetamol infusion, namely precise indication, dosage, proper drug, patients and duration of treatment. The research was a non experimental observation with prospective analysis. The study was conducted on 30 patients receiving paracetamol infusion therapy at General Hospital Wahidin Sudirohusodo Makassar. In this study we found, that the iv paracetamol use was only 11 (36,67%) patients are rational based on body temperature above 38^{o}C , whereas based on numeric rating scale >6 only 4 patients (13.33%) got the rational therapy. Dosage use was irrational, because the choice of dosages were without attention to the patient weight and additional risk factors, such as hepatotoxicity and nephrotoxicity. From 30 patients 6 (20%) patients with high ALT and also 6 (20%) patients with high AST were treated with intravenous paracetamol. Only 2 of 30 patients (13,34%) were treated rational with the short- term treatment. Based on the irrational use of iv paracetamol study, we can show that clinical pharmacist should increase their role in the rational use infusion to avoid the drug related problems.

Keywords: intravenous paracetamol; rational use, numeric rating scale, hyperthermia

ID-92

Pharmacokinetics Modeling of Potential Anticancer Agents from Makassar Medicinal Plants

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Plant *Boehmeria virgata* belongs to the family Urticaceae and has been traditionally used by Makassar tribe to treat cancer. In the previous study, we showed that BVI03 isolate has potent antiproliferative activity against HeLa cells. The BVI03 compound was characterized as alkaloid compound namely 10-(6,6-dihydroxy-hexyl) -2,3,6-trimethoxy-phenanthrene-9-carboxylic acid amide. also the alkaloid compound BVI03 from *Boehmeria virgata Linn* has anticancer activity against HeLa cell line, it had better anticancer activity than positive control doxorubicin. In this study, the "drug-likeness" of compounds from this plants, which have shown *in vitro* anticancer, cytotoxic and antiproliferative activities has been explored. To verify potential binding to anticancer drug targets, the interactions between the compounds and selected targets have been analyzed by *in silico* modelling. Docking and binding affinity calculations were carried out, in comparison with known anticancer agents. The results reveal that this medicinal plants could represent a good starting point for the discovery of anticancer drugs.

ID-94

Evaluation of The Antibacterial Combination Aquillaria Malacencis Extract on Pathogenic Bacteria From Ulcus Patients

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Background. Diabetes Mellitus (DM) is a chronic metabolic disorder disease characterized by high blood sugar levels (hyperglycemia). Diabetic ulcers are one of the most common chronic complications of DM. The ulcer becomes the entrance gate of bacteria that includes Gram positive and Gram-negative bacteria that spread rapidly and cause tissue damage. This reseach analyzed invitro antibacterial activity from combination plant extraxt and antibiotic against B.cereus against pathogenic bacteria species aiming to determine the minimum inhibitory concentration (MIC) and Fractional Inhibitory Concentration Index (FICI). Aim: This study aims to determine the type of Gram positive and Gram-negative of aerobic bacteria from diabetic ulcer III degree and IV Wagner and to know the sensitivity of antibiotics against these bacteria at the Kitamura Clinic Pontianak period November 2017-January 2018. Method: This study used descriptive cross-sectional method in which the sample was taken by swab on the ulcer of 24 samples. Wound smear samples in diabetic ulcer patients were taken and inoculated on 3 media were Blood Agar Plate (BAP), Mac Conkey Agar (MCA) and Salmonella Shigela Agar (SSA). Identification of Gram positive and Gram negative aerobic bacteria was done by biochemical test and coloring test. The Aquillaria malacencis extract combination with Gentamicin, Tetrasixlin and Siprofloxcacin was performed using Kirby Bauer diffusion method and determination FICI. Results: A total of 14 types of pathogenic bacteria were identified from 24 patients.AerobicGram negative bacteria that infecting on diabetic ulcers were *Klebsiella pneumoniae* (5%), *Serratia mercescens* (5%), *Escherichia coli* (2,5%), dan *Proteus penneri* (5%). Aerobic Gram positive were *Stapylococcus aureus* (12,5%), *Enterococcus gallinarum* (7,5%), *Basillus megaterium* (30%), *Streptococcus pyogenes* (2.5%), *Microbacterium hydrocarbonoxydans* (2.5%), *Basillus subtilis* (2.5%), *Basillus cereus* (4,5%), *Corynebacterium accolens* (12,5%), *Actinomyces urogenitalis* (2.5%), and *Paenibacillus timonensis* (2.5%). Based on pervious study shown that combination extract with Tetracixlin have sinergistic effect as antibacterial against pathogenic bacteria from diabetic ulcer patients.

Keywords: diabetic ulcers; bacteria; MIC; FICI.

ID-95

Distribution Model of Poisonous Plants as Conservation Effort of Biopesticides Sources In Batang Gadis National Park, North Sumatera

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Poisonous plants species diversity in Indonesia have not been explored optimally as a potential source of biopesticides. Batang Gadis National Park (TNBG) as one of the biodiversity hotspot of poisonous plants in North Sumatera. The study aimed to identify poisonous plants, analysis of diversity, and phytochemical analysis to determine the content of alkaloids, terpenes, flavonoids, saponins and tannins. The identification results obtained 14 species of poisonous plants with 10-12 species in different levels (understory, seedlings, saplings, poles, and trees). Analysis vegetation results obtained Ayu Ara, Ayu Otang, Dong dong, and Supi which dominating all levels of plants. Modelling used Vapor Pressure Model for lower plants, Sinusoidal Model fit for seedlings, saplings and poles, as well as to the Hoerl Model for Tree. The content dominant on poisonous plants in TNBG predominantly of terpene content except for Tabar-Tabar *(Costus speciosus Sm.)* which containing flavonoids and tannins. Potential of poisonous plants as biopesticides were species of Dong-dong *(Laportea stumulans Gaud)*, Langge *(Homalonema propinqua Ridl)*, Modang / Modang Londir *(Persea rimosa)*, and Sitarak *(Macaranga gigantea)*. While the species with the highest sources were Latong *(Litsea leefeana)* and Dong-dong *(Laportea stumulans Gaud)*.

Keywords: poisonous plants, fitochemistry, Batang Gadis National Park, modelling

ID-96

Antioxidant and Natural UV Protector Compounds from Indonesian Brown Seaweeds Biopigments as Cosmeceuticals Ingredients

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Brown seaweed's polysaccharide has been used for years as main ingredients of food and health products. *Sargassum polycystum* and *Padina minor* are brown seaweeds containing specific pigments that have various pharmacological activities. The purpose of this study was to obtain the pigment compounds and determine the biological activities of bio pigment contained in *S. polycystum* and *P. minor*. Bio-pigments extraction was carried out using two types of solvents (polar and non polar) with various concentrations. The yields of *S. polycystum* pigment extract with ethanol solvents were 20-25% while with acetone solvents 28-30%. *S.polycystum* and *P.minor* pigments qualitatively contain alkaloids, phenols, saponins, tannins, and steroids compounds. Separation of pigments by thin layer chromatography successfully separated chlorophyll pigments, lutein, and carotenoids. Fractionation of pigment extracts resulted in six fractions and each of them were biologically tested as antioxidants. The identification of active compounds in seaweed pigment with LC-MS/MS shows the content of chlorophyll pigment, carotenoid and flavonoids and their derivatives. Active compounds of pigments such as carotenoid and flavonoid have therapeutic effects and can be useful in the health field. The pigment compounds obtained from this study contain high antioxidant capacities and uv-protection activity, which had determined by various in-vitro tests.

Keywords: Antioxidant capacities, Biopigments, *P. minor*, *S. polycystum,* uv-protection

ID-98

Heavy metals contamination of selected leafy green vegetables in urban agricultural soils in Medan Indonesia

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The contents of heavy metals copper (Cu), lead (Pb), and cadmium (Cd) in various leafy vegetables viz., spinach, mustard and brassica which grown in urban contaminated soils in Medan, Indonesia. Vegetable samples digested and extracted using 98% nitric acid and analyzed with Atomic Absorption Spectrophotometer (AAS) to determine concentrations of Cu, Pb and Cd in vegetables. The results showed that concentrations of Cu, Pb and Cd in leafy vegetables spinach ranged from 12.88 - 15.40 mg/kg, 1.13-6.30 mg/kg, and 0.000664 - 0.000879 mg/kg dry weigh, respectively. In brassica ranged from 8.49 mg/kg - 13.68 mg/kg, from 0.16-1,9 mg/kg; than 0.000263 mg/kg up to 0.000358 mg/kg dry weight of plants. In mustard ranged from 8.54-24.95 mg/kg, from 1.44 - 4.78 mg/kg, and from 0.000534-0.001382 mg/kg dry weight of plants respectively. The brassica had the higher concentrations of Cu (62 mg kg^{-1}), Pb (1,235 mg kg^{-1}), as compared to spinach (Cu was 41,1 mg kg^{-1} and Pb was 1,124 mg kg^{-1}), and mustard Cu was 16 mg kg^{-1}, and Pb was 1,235 mg kg^{-1}. Our findings indicated that the mean concentrations of each heavy metals Cu, Pb and Cd in all vegetables exceeds permissible limit which recommended by WHO/FAO.

Keywords: vegetables; heavy metal; copper; lead; cadmium

ID-100

Screening of Cultivated Cyanobacteria for Cytotoxicity and Antiviral Activity against Vero-cells and Herpes Simplex Virus Type-1

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Herpes simplex virus type 1 is a common human pathogen that cause localized skin infections of the mucosal epithelia of genitals, oral cavity, pharynx, esophagus and the eye. HSV infections may also cause severe problems in immune-deficient patients including acute necrotizing encephalitis and meningitis. Cyanobacteria are about three to four billion years old class of ubiquitär distributed prokaryotic microorganisms, living in marine or freshwater environment. They show a remarkable morphological and ecological diversity and are producers of an enormous number of active compounds of different chemical structure. From this reason they have been identified as one of the most promising source of biologically active compounds with potential therapeutic use. Fourteen methanolic and aqueous extracts from the biomass of seven cultured cyanobacterial species (*Nodularia spumigena, Lyngbya spec., Oscillatoria lutea, Tolypothrix distorta, Scytonema bohneri, Calothrix gracilis and Microcystis ichthyoblabe*) were examined for cytotoxicity against Vero cells and antiviral activity against HSV-1. The results showed that four aqueous extracts from four cyanobacteria (*Tolypothrix distorta, Scytonema bohneri, Calothrix gracilis* and *Microcystis ichthyoblabe*) were cytotoxic to Vero cells with CC_{50} values range from 1.6 to 100 µg/mL, while all methanolic extracts of seven tested cyanobacteria were not cytotoxic to Vero cells at concentrations up to 100 µg/mL (CC_{50}>100 µg/mL). For antiviral activity, only extracts without cytotoxic effect were tested by dye uptake assay against HSV-1 virus. Eight of ten extracts were found to be active against HSV-1 with IC_{50} values between 10 and 85 µg/mL. The most pronounced activity against HSV-1 was shown by methanolic extract of *Nodularia spumigena* with IC_{50} of 10 µg/mL and selective index (SI) more than 10.

Keywords : Cyanobacteria, Culture, Cytotoxicity, Vero-cell, Antiviral Activity, HSV-1

ID-101

Screening of Endophytic Antibiotics Producing Bacteria From Breadfruit Plants (Artocarpus Altilis) Using 16s Rrna And its Activity Testing

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The screening of endophytic antibiotic producing bacteria from breadfruit plants (*Artocarpus altilis*) using 16S rRNA and its activity testing has been carried out. The screening was performed using experimental method including endophytic bacterial isolation, and bacterial identification molecularly using 16s rRNA. Furthermore, activities of the isolated bacteria were tested using agar diffusion method. 13 tested bacteria were *Streptococcus mutants* ATCC 25175, *Bacillus subtilis* ATCC 6633, *Vibrio chlorea* Inaba, *Escherichia coli* ATCC 25922, *Enterococcus faecalis* ATCC 29212, *Micrococcus luteus* ATCC 10240, *Pseudomonas aeruginosa* ATCC 27853, *Staphylococcus epidermidis* ATCC 12228, *Salmonella typhimurium* ATCC 14028, *Salmonella thyposa* NCTC 786, *Salmonella thypii, Salmonella thypimurium,* and *Methycillin Resistant Staphylococcus aureus* (MRSA). There were two antibiotics producing bacterial founded. Both of isolates obtained have homology 99% against *Pseudomonas psychrotolerans* strain AP9-27B and *Pseudomonas oryzihabitans* strain AF31. Results showed that both of isolated bacteria were able to inhibit some test bacteria. The further study would be optimization of the fermentation process and their antibiotic activity test.

Keywords: endophytic bacteria; breadfruit (*Artocarpus altilis*); antibiotics, fermentation.

ID-102

Isolation and Identification of Active Compounds from Soursop Leave (*Annona Muricata* Linn.) as Acetycholinesterase Inhibitor

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Alzheimer's disease (AD) is a neurodegenerative disease in the form of reversible dementia. Inhibition of acetylcholinesterase roles an important not only to enhance cholinergic transmission in the brain but also to reduce the aggregation of Aβ and the formation of neurotoxic fibrils in AD patients. Therefore, inhibition of AChE and BuChe has become an outstanding alternative in the treatment of AD. The purpose of this study was to determine the activity in the treatment of AD by inhibiting AChE by soursop leaf extract. AChE inhibitory activity test was carried out based on the method of Ellman. This method is based on the reaction substrate hydrolysis by AChE with DNTB which gives a yellow color and absorbance was measured at a wavelength of 410 ± 5 nm. The test results showed that the AChE inhibition of 96% ethanol extract (F.EtOH) from the leaves of *Annona muricata* Linn. provide the highest inhibition with IC_{50} value of 69.93 ppm. AChE inhibition of compounds isolates F.EtOH.1.2.1 is the highest value with IC_{50} values of 3.65 ppm. Meanwhile, the positive control of donepezil HCl with IC_{50} value of 0.016 ppm. Kinetics inhibition of AChE is a competitive. Identification active compound of acetylcholinesterase inhibitors is mixture of kaempferol 3-(2G-apiosylrobinobioside), annomuricatin B, muricoreacin, muridienin 4 and chatenaytrienin 1.

Keywords: Acetylcholine, Acetylcholinesterase, Alzheimer, *Annona muricata* Linn., Ellman method

ID-106

Immunomodulatory Potencial Of Faloak (Sterculia quadrifida R.Br) Bark Extracts

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Faloak (*Sterculia quadrifida* R.Br.) is an Indonesia indigenous plant which its bark has widely used as traditional remedy for alleviate fatigue amongst hard workers. This research aims to explore the potency of Faloak bark as immunomodulator by in vitro technique

Barks were extracted by using water, ethyl alcohol and ethyl alcohol-water (1:1) separately. Each extract was determined the total phenolics and total flavonoids contents. Immunomodulator activities were done by evaluation of the extracts effects on mice macrophages and lymphocytes.

Phenolics and flavonoids contents of each extracts were determined as follows i.e. 22.09 ± 0.71 %GAE and 11.89 ± 0.28 %NE for ethanol extract; Water extract significantly increased the macrophage phagocytosis in comparison to control, of which 1 mg/mL sample exhibited value of 145.72 ±0.18%. However, all extracts showed IS value < 2 which showed no effect of lymphocyte proliferation.

Keywords: Faloak barks, total flavonoids, total phenolics, macrophage phagocytosis, lymphocyte proliferation

ID-108

Trichoderma harzianum, Pleurotus ostreatus, and MO Plus as Biocontrol Agents of Pod Rot Disease (Phytophthora palmivora) of Cocoa

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Phytophthora palmivora is a major pathogen of cocoa plants in Indonesia which causes considerable economic losses. Control of pod rot disease using antagonist microbes has a good prospect. The aim of this research is to know the effectiveness of *Trichoderma harzianum*, *Pleurotus ostreatus* in powder formulation and bacterial consortium MO Plus in liquid formulation on intensity attack of *P. palmivora* either in single or combination treatment. The research was conducted in cocoa plantation in Maros Regency of South Sulawesi. Observation of the intensity attack of *P. palmivora* was performed at weeks 1, 2, 3 and 4 after application. The results showed that the intensity attack of *P. palmivora* on control treatment (P0) was 88.89%, whereas in single antagonistic treatment P1 (*T. harzianum* 15 g L-1) the intensity attack reached by 8.50%, P2 (*P. ostreatus* 15 g L^{-1}) by 10% and P3 (MO Plus 20 m L^{-1}) by 20%. In combination treatment of PK1 (MO Plus 20 m L^{-1} + *T. harzianum* 15 g L^{-1}) intensity attack was 16.67%, PK2 (MO Plus 20 m L^{-1} + *P.ostreatus* 15 g L^{-1}) was 22.22%, PK3 (*T. harzianum* 15 g L^{-1} + *P.ostreatus* 15 g L^{-1}) was 25% and PK4 (MO Plus 20 m L^{-1} + *T. harzianum* 15 g L^{-1} + *P.ostreatus* 15 g L^{-1}) was 5.56%. This suggests that single treatment (P1) and combination treatment (PK4) proved the most effective treatment in inhibiting *P. palmivora* infection.

Keywords: pod rot of cocoa, antagonist, *Phytophthora palmivora*

ID-109

Exploring the HIV/AIDS Patients in a Private Hospital in Padang, Indonesia: Patients Characteristic and Medicines Use Evaluation

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The purpose of this study is to determine the demographic characteristics and the appropriateness of antiretroviral use on the HIV/AIDS patients in a private hospital in Padang, Indonesia. This study is descriptive-evaluative study and use retrospective data.

The results show that the majority of HIV/AIDS patients were male, early adulthood (26 - 35 years), pass the middle level of education (senior high school), married, and employed. The largest risk factor of diseases transmission was heterosexually. There was no significant difference the patients gender and risk factor based on education levels, marital status, and employment

Majority of drug therapy was combination of tenofovir + lamivudine + efavirenz. Evaluation to drug use was 100% appropriate on indication, patient and dosage regiment. Meanwhile, the potential of drug interactions were 40.23%, majority of them were lamivudin vs cotrimoxazole.

Keywords: medicines use evaluation; HIV/AIDS patient; hospital pharmacy; clinical pharmacy.

ID-111

Sexual Behavior Activity fractionation of (Polyscias scutellaria (Burm.F) Merr)

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Sexual dysfunction is a decrease in libido or sexual desire that is often experienced by men with stress as the highest cause factor. Sexual dysfunction disorder is a very frightening thing for men. To overcome and reduce the incidence has been a lot of research done to find plants that have aphrodisiac activity. In previous research mangkokan leaf extract (Polyscias scutellaria (Burm.F) Merr) showed positive aphrodisiac activity on test animals. This research proves that mangkokan leaf fraction has aphrodisiac activity. The study was conducted on the fraction of the test group of fractions with the dose of 1500 mg / KgBB given to each fraction during the week of observation on the sexual activity of animals tested on day 8. The observation result showed that the leaves fraction of mangkokan gave positive activity on the increase of animal sexual activity on doses of 1500 mg / KgBB and the activity of the n-butanol fraction provide an increase in sexual activity that is similar to that of the comparison group using sildenefil. This shows that the compound of mangkokan leaves at n-butanol fraction has better aphrodisiac activity than other fractions.

Keywords: aphrodisiac; sexual dysfunctions; polyscias; N-butane; sildenefil.

ID-112

Characterization of crude protease from two isolates of Actynomycetes

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There are some health benefits of supplementing protease to human health and disease prevention/management. Protease known as a proteolytic enzyme, peptidase or proteinase is a type of enzyme that functions mainly to digest different kinds of proteins. They hydrolyse and convert proteins into smaller chains called peptides or even smaller units called amino acids. In order to get detail properties of protease, we characterize the crude protease activity from actinomycetes isolates CiIA5b-DW and L88b-DW. The study has been carried out using azocasein as substrate. Characterization of this two protease enzyme sources have been done based on the effects of pH, temperature, inhibitor and inductor, and their K_m and V_{max} value. Our work showed the highest specific activity (143,993 U/mg) of CiIA5b-DW was observed at the exponential phase (16 h) while the highest activity (36,862 U/mg) of L88b-DW was observed at the end of stationary phase (40 h). The enzyme has optimum activity at pH 9 and temperature 50—60^{0}C for CiIA5b-DW, and pH 8--9 and temperature 50^{0}C for L88b-DW. The enzyme from CiIA5b-DW was induced when treated with Ca2+ 5 mM, whereas the enzyme from L88b-DW was induced when treated with Mg2+ 5 mM. The CiIA5b-DW and L88b-DW enzyme maintained 71,073% and 22,2225% of its activity by the addition of EDTA 5 mM. Value of *Km* and *V*max of CiIA5b-DW and L88b-DW was 5,687 mM, 0,057 U/min, 18,034 mM, and 0,092 U/min, respectively. Result showed that protease from CiIA5b-DW is more potential than protease from L88b-DW.

Keywords: characterization; kinetic; protease; actinomycetes, Azocasein

ID-113

Analysis of Administrative, Pharmaceutical and Clinical Aspects Review of Outpatients' Prescriptions at RSUD South Tangerang City and Private Hospital (RS X) on January 2017

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The prescribing study is a very important aspect of pharmacy services,especially in drug services because it can cause the occurrence of medication error risks. This study aimed to observe if the prescription service at a public hospital, RSUD South Tangerang City and a private hospital in Ciputat (RS X) outpatients' prescription in January 2017 wa conformable with the Health Minister Regulation, Number 58 of year 2014. In this research, observational quantitative design with the cross sectional research approach has been used. The sampling method was done by using random sampling method which obtained 138 sample sheets. The results of the prescriptions' administrative aspect review has shown that the components of sample sheets that has been conformable with the health minister's regulation Number 58 of Year 2014 were as follows: 100% patient name, 100% doctor identity, 100% SIP number and 100% physician's signature for both hospitals, and the unconformable components were as follows: age of patient 51% for RSUD South Tangerang City and 29% for RS X. Prescriptions' pharmaceutical aspect review includes writings clarity of dosage form were 53% for RSUD South Tangerang City and 34% for RS X. Meanwhile,the prescriptions' clinical aspect review has found thatthe samples with appropriate frequency of drug administration according to the guidelines were; 99.3% for RSUD South Tangerang City and 89.8% for Private Hospital X; and the findings of drug interactions were; 62.3% forRSUDSouth Tangerang City and 53.8% forRS X. The results of thisprescriptions' review according toThe Health Ministry Regulation, Number 58 of Year 2014 is expected to help improving the prescription services to patients in both hospitals and also can prevent the risk of medication errors.

Keywords: analysis of administrative aspect review; pharmaceutical aspect review; clinical aspects review.

ID-115

Determination of Vitamin C Levels Kampar Citrus (Citrus sinensis (L) Osbeck) and Citrus ponkam (Citrus poonensis) with Spektrofotometri Method and Iodimetry Method

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Vitamin C is one of the nutrients that act as antioxidants and effectively overcome free radicals that can damage cells and tissues. Vitamin C in oranges is a good source of vitamins. The number of varieties of citrus fruits both local and imported vitamin C has a different content. One of the local oranges of Indonesia province of Riau is Kampar orange and imported oranges are often circulated namely Ponkam orange. This study aims to determine the levels of vitamin C in the sample of oranges Kampar and orange Ponkam by comparing the two methods of spectrophotometry and iodimetry. The result of vitamin C level using spectrophotometric method was 62.4 mg/100g for sweet orange and 44.97mg/100g for Ponkam orange while iodometry method obtained a result that is 33.71 mg/100g for orange Kampar and 17.94 g/100mg for Ponkam. From the results of research using the same sample, there are differences in vitamin C levels because of using different methods. Determination of vitamin C content using UV-Vis spectrophotometer method higher than the results using the iodometric method

Keywords: kampar orange; ponkam orange; vitamin C; spectrophotometer; iodometric.

ID-121

Antibacterial Activity off Cochliobolus Geniculatus (Hf12) Extract from Marine Sponge Haliclona Fascigera Cultivated in Four Different Medium

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Cochliobolus geniculatus is a marine derive fungus isolated from marine sponge *Haliclona fascigera*. In this study, the fungus was cultivated on four different growth in order to analyze its antibacterial activity and the weight of the extract. The fungus was cultivated on rice in seawater, rice in purified water, Malt Extract Broth (MEB) in seawater, and MEB in purified water within 1-6 weeks. The cultivation results were extracted every week to determine the weight of extract, analyze the secondary metabolite, and antibacterial activity against *Staphylococcus aureus*. Tests of antibacterial activity were performed by agar diffusion method and the determination of the secondary metabolite was performed by Thin Layer Chromatography (TLC). The results showed that the highest weight of extract produced in 5-week cultivation on rice in purified water and the highest antibacterial activity produced in 6-week cultivation on MEB in purified water. Based on the statistical test, duration of cultivation did not affect the weight of extract (Sig = 0.174) but, it significantly affected antibacterial activity (Sig. = 0,000). Media of cultivation did not affect antibacterial activity (Sig = 0.95), but affected weight of extract significantly (Sig = 0.000). Based on TLC analysis, there are more varied spots from cultivation on MEB than rice. In this study, it can be concluded that media and duration of cultivation lead to differences in weight of extract, antibacterial activity, and the content of secondary metabolites produced by the fungus.

Keywords: cultivation media; secondary metabolite; Haliclona fashigera; marine sponge; Cochliobolus geniculatus; antibacterial activity.

ID-122

Expanded-Spectrum Beta Lactamase-Producing Klebsiella pneumonia Infection in a Patient on Scald-Burn Injury with Hospital-Acquired Pneumonia

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Significantly higher mortality has been demonstrated in patients with severe burn complicated by *Klebsiella pneumonia* infection. This case report assesses the efficacy combination of meropenem and levofloxacin to treat *Klebsiella pneumonia* ESBL on the scald-burn injury with hospital-acquired pneumonia.

A case study of a 52-year-old male had scald burn with late onset of Hospital Acquired Pneumonia (HAP). *Klebsiella pneumonia* ESBL was isolated from tissue burned culture. Initially, the patient was treated with meropenem and levofloxacin injection for a week. Then, *Acinetobacter baumanii* was isolated from tissue burned infection and ampicilin-sulbactam was the only one antibiotic which still susceptible to this pathogen. But with the clinical judgment, the combination of these antibiotics was still continued. After administration of these antibotics, rapid clinical improvement with signs short of breath, fever, cough was not observed and also the lung infiltrate was improved. The combination of meropenem and levofloxacin, may be a useful treatment option for hospital-acquired pneumonia related to *Klebsiella pneumonia* ESBL and also *Acinetobacter baumanii*, even these combination were resistance to *Acinetobacter baumanii*. Further research is also needed to clarify the effectiveness of meropenem and levofloxacin to treat *Klebsiella pneumonia* ESBL infection in the burn patient.

Keywords: klebseilla pneumonia ESBL ; acinetobacter baumanii ; hospital acquired pneumonia ; meropenem ; levofloxacin.

ID-123

Preparation of 99mTc-quercetin as Cancer Radiotracer

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Quercetin is a natural compound that has many biologic activities to treat various diseases. Quercetin has significant role in inhibition of cancer cells, such as breast, ovary, prostate, colon, endometrium and lung tumor cancer cells. This research was conducted to prepare the technetium-99m labelled quercetin as a potential cancer radiotracer. 99mTc-quercetin complex was prepared using 30 µg $SnCl_2.2H_2O$, 0.5 mg quercetin hydrate, with pH of reaction 7.5. The reaction of 99mTc-quercetin complexation was quite rapid which only needed few minutes to reach labelling efficiency of 98.52 ± 0.96 %. The labelling efficiency was determined by thin layer chromatography with NaCl 0.9 % and acetone as the mobile phase. With the successful of this reaction, 99mTc-quercetin labelled compound may potentially use as a tools for in-vivo study in subsequent research, therefore the effectiveness of quercetin as an anticancer natural compound could be revealed.

Keywords: quercetin; antioxidant; cancer; technetium; radiotracer.

ID-124

The Effect of Ethanol Extracts of Averrhoa bilimbi L. Leaves To Total Cholesterol and LDL Levels in Hypercholesterolemic Mice

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Bilimbi (Averrhoa bilimbi L.) is a family plant of Oxalidacea which is used traditionally for various diseases such as joint pain, colds, diabetes mellitus, fever, hypertension and antiatherogenic. This study was conducted to determine the effect of ethanol extract of bilimbi leaves to total cholesterol and LDL in hypercholesterolemic mice. Mice aged 2-3 months and weight 20-30 grams was induced hypercholesterolemia with high-fat dietary (HFD) and propylthiouracil (PTU) 13 mg/kg BW for 14 days before given the ethanol extract of bilimbi leaves. The animal group test consisted of negative control, positive control, standard simvastatin, and ethanol extract of bilimbi leaves dose 200 mg/kg BW, 400 mg/kg BW, and 800 mg/kg BW. The extract was given for 14 days orally. The results showed that the ethanol extract of bilimbi leaves can reduce total cholesterol and LDL significantly ($P < 0.05$). Giving the ethanol extract of bilimbi leaves dose 800 mg/kg BW give the best effect to reduce total cholesterol and LDL level.

Keywords: *averrhoa bilimbi*; extract; cholesterol; LDL; hypercholesterolemia.

ID-125

The relation of ancient human health with climate: Case study of Batujaya population from West Java, Indonesia

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All across the world, people are facing a wealth of global environmental problems every day. Some of them are just a small problem which only affects a few ecosystems, but others are drastically can change the landscape of what we know. One of the factors causing global environmental problem is climate change which is occurred due to rise in global warming. Climate change has various harmful effects but not limited to melting of polar ice, change in seasons, occurrence of new diseases, frequent occurrence of floods and change in overall weather scenario. Also, climate change can directly or indirectly affect human health because high temperatures can add stress on human physiology.

In this paper will be discussed the relation of ancient human health with climate by means of examination of the existence of caries and calculus in the skeleton of Batujaya population from Krawang West Java who lived in the interglacial condition (warmer climate) approximately 2500 years ago.

Keywords: Climate change; Paleo-health; Batujaya

ID-126

Utilizing of Agriculture Waste as Pollutant Control: A Review

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Increasing of human and industrial population will be caused of environmental problem such as increasing pollutants in the environment. Heavy metals, chemical pesticides/fertilizers, industrial wastes are common pollutants that cause a bad effect for our health. Agriculture waste can be alternative natural product to reduce some pollutants. This paper presents a review on some agriculture waste such as rice husk or fruit skin waste can be utilized to reduce some pollutants. The purpose of this review article is to provide some information about utilizing of agriculture waste for environment. Further this information can be literature review to seeking another agriculture waste for pollution control

Keywords: agriculture waste; heavy metals; industrial waste; pollutants; pollutant control.

ID-127

Anti-Inflammatory Activity Test of 'Kandis Acid' Stem Extract (Garcinia Cowa Roxb) Against Carrageenan Induced Female White Female

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The anti-inflammatory activity of extract from the bark of *Garcinia cowa* Roxb had been studied. Anti-inflammatory effects were studied on female, white rats *in vivo* by using paw edema technique. A 0.2 mL Carrageenan 1% was administered as an edema inducer. The measuring parameter was the reduction of the volume of the rat's paw after the administration the extract using plethysmometer. The extract was given at various doses of 100 mg/kg, 300 mg/kg, and 900 mg/kg of body weight. Animals were divided into five groups, where the control group was only given the suspension of Na-CMC and aspirin with the dose of 45 mg/kg BW as the comparison dose. The group of animal which was given a dose of 900 mg/kg BW showed the maximum anti-inflammatory effect. The results of statistical analysis showed that bark's extract of *Garcinia cowa* Roxb with the dose 100 mg/kg, 300 mg/kg and 900 mg/kg BW are useful as an anti-inflammatory agent that is not significantly different with the comparison dose given aspirin (P 0.213> 0.05).

ID-130

Rationality of The Use of Secondary Stroke Prevention Therapy in Ischemic Stroke Patients in Education Hospital in Central Java

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Stroke is the third leading cause of cardiovascular disease after heart disease and cancer. Patients who survive the first stroke have a possibility to get a recurrent stroke. American Heart Association and Indonesian Neurologist Association recommend using secondary prevention to minimize recurrent stroke. This study aims to evaluate the use of secondary stroke prevention which includes an antiplatelet, antihypertensive and lipid-lowering agent of outpatient ischemic stroke. This study was observational research using purposive sampling method by comparing patient therapy with the guideline. Presentment of data was done descriptively in the form of the percentage of treatment rationality which included a proper indication, appropriate patient, proper drug, and proper dosage. The number of samples in this study was 74 patients. Data was taken from patients' medical record. The inclusion criteria were ischemic stroke patients and receiving secondary prevention therapy. Result of this study was of 74 respondents, 69 patients received antiplatelet, 59 patients received antihypertensive, and 18 patients received lipid-lowering agent. 69 (93.24%) patients receiving antiplatelet therapy was rational (appropriate indication, patient, medicine, and dose) of 74 patients were supposed to have antiplatelet; 59 (80.82%) patients receiving antihypertensive therapy were rational of 73 patients were supposed to have antihypertensive; and 18 (85.71%) patients receiving a lipid-lowering agent therapy were avowed rational of 21 patients were supposed to have a lipid-lowering agent.

Keywords: secondary prevention; ischemic stroke; antiplatelet; antihypertensive; lipid-lowering agent.

ID-133

Cytotoxic Compounds of the Leaves of Polyalthia glauca (Hassk.) Boerl

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The genus *Polyalthia* (Annonaceae) has been widely used in several traditional folk medicines. Some compounds isolated from *Polyalthia sp*. exhibited a potent anticancer activity. Detailed chemical investigation on *Polyalthia glauca* collected from Kebun Raya Bogor gave three new secolignans. The structures of the secolignans have been fully characterized by spectroscopic methods as Glaucinitinitin A, Glaucinitinitin B, and Glaucinitinitin C. These compounds were significantly toxic to HeLa cell line with the IC_{50} of 12.11±0.29 µg/mL, 6.62±0.2 µg/mL, and 9.02±0.2µg/mL, respectively.

Keywords: cytotoxic activity; heLa, polyalthia glauca,; annonaceae.

ID-135

Effect of Ethyl Acetate Extract of Noni (Morinda citrifolia L.) and 5-Fluorouracil Compound as Combinational Therapy on WiDr Colon Cancer Cell Lines: In Vitro Study

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Colon cancer was one among of the top 5 common cancers in men and women in the world. The exact cause of colon cancer is still unknown, but the over expression of cyclooxygenase-2 (COX-2) enzymes has a role in this cancer formation. WiDr cell lines was one of the less sensitive cell for 5-FU treatment, as an antimetabolite drug of chemotherapeutic agents. WiDr cell resistance was mediated by the increasing of thymidylate synthetase enzyme as the main target of 5-FU inhibition. It become big challenge to find the compound as a combination with 5-FU chemotherapeutic agent to increase the sensitivity of WiDr cells. The purpose of this study was to determine the effectiveness of the ethyl acetate extract of noni fruit (*Morinda citrifolia* L.) as co-chemotherapy in WiDr colon cancer cell lines. Sample of the experiment was used ethyl acetate extract of noni fruit. The parameters for this research were molecular docking, Thin Layer Chromatography (TLC), cytotoxic assay, and apoptotic assay. Molecular docking test were done by Autodock Vina software with COX-2 (PDB ID: 6COX) as a protein target. TLC method used to identify the active compounds in the extract. Cytotoxic assay were done by MTT method against WiDr cell lines. Apoptotic assay done used the best CI concentration of ethyl acetate extract of noni fruit and 5-FU compound in MTT result. Molecular docking had ΔG -5,25 kkal/mol value for coumarin and 6COX interaction. *Rf* value of coumarin with TLC method was 0,44. The IC_{50} value of ethyl acetate extract of noni fruit was 868,69 µg/ml and 5-FU IC_{50} was 795,54 µg/ml. The combination assay of ethyl acetate extract and 5-FU showed CI values 1,17 it means it had antagonist effects. Apoptotic test showed the combination of ethyl acetate extract of noni and 5-FU decreased the apoptotic of WiDr cell lines. The ethyl acetate extract of noni fruit was better for using as single treatment for colon cancer cell than combined with 5-Fluorouracil, and had antagonism effect in combination with 5-FU.

Keywords: ethyl acetate extract of noni fruit; WiDr; cytotoxic; apoptotic; co-chemotherapy.

ID-146

Agarose Isolation from Agar and its Application as an Adsorbent an Analysis of Cholesterol and Low-Density Lipoprotein in Duck Egg Yolk

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Agarose has been isolated from commercial agar that was extracted from red algae, Gracilaria gigas. Agarose was obtained by dissolving the agar powder with 70 °C preheated propylene glycol under continuous stirring, followed by increasing the temperature to 105 °C to get a homogenous solution with the concentration of 1% b/v agar. Agarose was separated from more soluble agaropectin by cooling process overnight at -5 °C, followed by adding isopropanol at room temperature to induce precipitation of agarose. Agarose precipitate was then separated from the centrifuge and dried at room temperature until the smell of isopropanol disappeared and the agarose granule was formed. The granule then was grinded to yield purified agarose powder. The sulfate content and gel strength of isolated agarose were measured with a standard method. It was found that sulfate content was 0.1468 %, and gel strength was 1537 g/cm2.

In this study, agar and isolated agarose have been applied as an adsorbent in an analysis of total cholesterol and low-density lipoprotein (LDL) in the yolk of Duck. Cholesterol concentrations were measured by spectrophotometric at λmax 550 nm with Automated Compact Clinical Chemistry Benchtop Analyzer (Horiba ABX Pentra) after adding The Horiba ABX Cholesterol CP reagent, and LDL concentrations were measured with the same method after adding The Horiba ABX LDL direct CP reagent. Research result showed that both of agarose and agar reduced cholesterol and LDL level in Duck egg yolk, and agarose had a higher adsorbent capacity than agar.

Keywords: adsorbent capacity; agar; agarose; duck egg yolk; cholesterol concentration; horiba ABX pentra; low density lipoprotein concentration.

ID-147

Cytotoxic Activities Extracts and Fractions of Sansevieria trifasciata Leaves With BSLT Method

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Lidah Mertua (Sansevieria trifasciata Prain.) are ornamental plant widely cultivated. The presence of specific chemical compounds namely pregnane glycoside, then this plants potentially developed as an anticancer. The objective of this research to determine the value of LC_{50} on extracts and fractions Sansevieria trifasciata leaves with BSLT method used Artemia salina Leach. From results the research in getting ethanol extract and fractions lidah mertua leaves are active cytotoxic marked with LC_{50} of extract ethanol, n-hexane fraction, ethyl acetate fraction, n–butanol fraction and the residual fraction consecutively are 251.189 ppm, 116.950 ppm, 76.033 ppm, 20.230 ppm and 34.754 ppm. Ethanol extract, n-hexane fraction, ethyl acetate fraction and remaining fraction categorized as toxic, whereas n-butanol fraction categorized as very toxic.

Keywords: cytotoxic; sansevieria trifasciata prain; BSLT.

ID-149

Publics Knowledge, Perception and Belief on Antibiotic Use in Panyabungan, Subdistrict Mandailing Natal, North Sumatera

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The intensity of the antibiotic use is relatively high and causes health problems, especially bacterial resistance. This study aimed to determine the publics' knowledge, perception and belief on antibiotic use in Panyabungan, Subdistrict Mandailing Natal, Sumatera Utara, Indonesia. This study used *cross*-sectional design with total sample of 198 respondens taken by *purposive random sampling*. The data were retrieved on December 2017 using a questionnaire consisted of demographic, knowledge, perceptions, and belief. Analysis of the data used univariate and bivariate analyses. From the result of the research, it was found that the community knowledge regarding the antibiotic use was only 37.9 % belongs to good category, whereas majority of the perception and belief of community on antibiotic use were moderate with magnitude of 69.7 % and 74.7 %, respectively. Statistical analysis showed a significant relationshp between the community knowledge of antibiotic use and the demography of the respondens ($p<0.1$). On the other hand, statistical test did not indicate a significant relationship between perception as well as belief of antibiotic use and demography of the respondens ($p>0.1$). Based on the results of this study, it can be concluded that knowledge, perceptions, and belief of the antibiotic use are still need to be improved.

Keywords: antibiotic; knowledge; perception; belief; resistance.

ID-151

Cytotoxic Activity of Modified Chitosan Nanoparticle Containing Combination Doxorubicin and Curcumin Analogue

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A common problem related to anticancer delivery is the unspecific delivery of the substance. In this research, chitosan was modified using folate by conjugating chitosan with folic acid (chitosan-FA) for specific delivery of anticancer agents. The chitosan-FA then prepared into a nanosize particle (NP) and used for delivering anticancer, a combination of doxorubicin (DOX) and curcumin analogue, *2,5 – bis - (4 – hydroxyl, 3,5 – dimethyl benzylidene)cyclopentanone* (Pentagamavunon-1, PGV-1). The purpose of this research is investigating cytotoxic activity of chitosan-FA NP containing the active substances against MCF-7 breast cancer cell. The ionic gelation method was used for nanoparticle preparation using 0.05% w/v chitosan-FA with an addition of 0.5% v/v of tween 80. The particle size was analyzed with Particle Size Analyzer (PSA), whereas the encapsulation efficiency (EE) was analyzed using ultrafast liquid chromatography (UFLC). Anticancer activity of nanoparticles was carried out using MTT method. The particle size obtained for chitosan-FA containing active substances was 111.8 ± 4.11 nm with the EE 78.7± 6.61 % for DOX and 12.1 ± 0.40% for PGV-1. The cytotoxic test with MTT assay showed that combination of DOX and PGV-1 in chitosan-FA NP had anticancer activity against MCF-7 cells with IC_{50} value 25.7±2.76 µg/mL for DOX and 22.9±2.15 µg/mL for PGV-1 in combination

Keywords: nanoparticle; chiltosan; folate; cytotoxic.

ID-152

Active Lifestyle Perception Among Urban Adolescent

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Advances in science and technology not only provide many benefits to humans but also make people inactive. In Indonesia the proportion of the inactive population > 10 years was 26.1%. Increased inactive lifestyle has an impact on increasing the prevalence of non-communicable diseases as well as its risk factors. The purpose of this study was to explore the perception of adolescents about an active lifestyle. This study employed phenomenology approach. In-depth interviews conducted with snowballingly selected 14 high school students in East Jakarta. Audio-recorded transcribed verbatim and thematically analyzed. Emergent themes related to active lifestyle included the recognition of active lifestyle terms and its information sources, active lifestyle understanding, efforts to live active, motivators and barriers for active life. An active lifestyle is more understood as a variety of activities related to the dynamics of the participants as students who were loaded with various activities at school as well as in the community, compared to health-related physical activities as recommended by WHO. Active lifestyle promotion need to be implemented more intensively by using interesting media through information channels commonly used by adolescents.

Keywords: physical activity, adolescent, qualitative research

ID-154

Hepatoprotective Effect of Bee Glue in Mice Induced by Carbon Tetrachloride (Ccl4)

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Bee glue reported have the broad spectrum of biological activities. The objective of this study were to investigate the hepatoprotective effect of bee glue on the activity of Glutamic Pyruvic Transaminase Serum (SGPT), Glutamic Oxaloacetic Transaminase Serum (SGOT) and liver histologic profile of mice induced by CCl_4. There were 25 mice which randomly divided into five groups: negative control group received aquadest, positive control group administered CCl_4 (2,8 mL/kgBW, p.o.) dissolved in oleum sesami, and treatment group received bee glue at dose 25, 50 and 100 mg/kgBW for 14 days. Hepatoprotective activity showed to reduce the activity of SGPT in bee glue administration at dose 25, 50 and 100 mg/kgBW in respectively (46.90 ± 4.71 U/L), (39.14 ± 4.63 U/L), and (32.34 ± 3.61 U/L) compared the activity of positive control group (54.34 ± 8.29 U/L) ($p<0.05$); reduce the activity of SGOT in bee glue administration at dose 25, 50 and 100 mg/kgBW in respectively (65.99 ± 11.17 U/L), (51.06 ± 5.07 U/L) and (41.72 ± 3.5 U/L) compared the activity of positive control group (82.81 ±9.31 U/L) ($p<0.05$); reduce the score of histology in bee glue giving a dose 25, 50 and 100 mg/kg in respectively (3.40 ± 0.36), (3.04 ± 0.14) and (2.92 ± 0.13) compared the activity of positive control group (3.74 ± 0.12) ($p<0.05$). Bee glue can decreased activity of SGPT, SGOT, and score of histology of mice which were optimum at dose 100 mg/kgBW.

Keywords: hepatoprotective effect; bee glue; SGPT; SGOT; carbon tetrachloride; histology.

ID-158

Sub-Acute Toxicity and Its Reversibility of Ethyl Acetate Fraction of Cassytha filiformis L. on Rat Renal Function and Histology

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Toxicity test of ethyl acetate fraction of Casytha filiformis L. to the renal function and histology on male white rat has been done. A total of 36 white male rats were used. Animals were divided into 4 main groups consisting of 1 control group and 3 groups given fractions at doses of 2.5, 5 and 10 mg/kgBW (kg body weight) orally for 7 days. Animals were sacrificed, blood and kidneys were taken out on the day 8th, 10th and 14th to assessed the function and histopathology of the kidneys. The percentage of renal function and renal histology data on 8th day were analyzed by one-way ANOVA while the change percentage of renal function and histology on 8th until 14th day were analyzed by two-way ANOVA followed by Duncan Multiple-Area test. The results showed that the percentage of renal function on test animals significantly lower than control ($P<0.01$). This correlated with the percentage of glomerular damage and the degree of tissue damage in the test animals was significantly higher than control ($P<0.05$). Renal function decrease and the rate of tissue damage increase in time. This results indicated that the ethyl acetate fraction of Casytha filiformis L. at the dose of 2.5-10 mg/kgBW is irreversible nephrotoxic if used for 7 days.

Keywords: cassytha filiformis L.; ethyl acetate fraction; sub-acute toxicity test; renal function; renal histology.

ID-159

Hesperidin inhibits mammosphere formation from MCF-7 breast cancer cell

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Cancer stem cells (CSCs), a small population of cells within tumors, contribute to drug resistance, tumor recurrence, and metastasis, and therefore, CSCs targeted therapy are needed for the management of this disease. Previously, hesperidin exhibited cytotoxicity on several cell lines (e.g. MCF-7, T47D, NALM-6, and HepG2) and increased the cytotoxicity of classical chemotherapy doxorubicin on MCF-7/DXR cells. This study aimed to investigate the potential of hesperidin to target Breast CSCs in MCF-7 cells cultured under 2D and 3D models. Spheroid formation assay was used to enrich BCSCs. Here we used MTT and colony counting for measuring cytotoxicity and mammosphere forming potential, respectively. Our results showed that hesperidin exhibits cytotoxicity in both monolayer cells and mammosphere. Hesperidin is potential for eradicating cancer stem cells and overcoming chemoresistance.

Keywords: hesperidin; breast cancer; drug resistance; mammosphere, cancer stem cells.

ID-160

Physicochemical characterization of 99mTc-rutin as radiotracer for the development of cancer drugs from natural products

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Rutin is a one of flavonoid compound from natural products that has an antioxidant activity and inhibit the process of angiogenesis in cancer cells. To provide meaningful biological and pharmacological information for understanding bioavailability and bioactivity as well as for development of new biomolecules for cancer treatment, we synthesized ^{99m}Tc-rutin as radiotracer. Rutin was successfully radiolabeled by technetium-99m with radiochemical purity 95.51 ± 1.38%. HPLC profile showed that there was no presence of another compound except ^{99m}Tc-rutin. Physicochemical characterization study showed that ^{99m}Tc-rutin has neutral charge with lipophilic value = 0,18 ± 0,02. ^{99m}Tc-rutin was bound to plasma protein as much as 90,96 ± 1,49 and remains stable up to 3 hours at room temperature. The physicochemical characterization data from this study can be used as a reference for subsequent preclinical research for the development of rutin as cancer drugs from natural product.

Keywords: anti cancer; radiotracer; 99mTc-rutin; physicochemical characteristic.

ID-161

99Mo-adsorption Profile of Zirconia-based Materials for 99Mo/99mTc Generator Application

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Technetium-99m (^{99m}Tc) plays major role in diagnostic nuclear medicine and has not yet been replaced with any other radionuclides. It is available through ^{99}Mo/^{99m}Tc generator. The use of low specific activity of ^{99}Mo for ^{99}Mo/^{99m}Tc generator application, requires high adsorptive capacity sorbents. This study focused on determination of ^{99}Mo adsorption capacity of some zirconia materials, namely monoclinic nanozirconia, orthorhombic nanozirconia, sulfated zirconia and fosfated zirconia. These materials were synthesized by using sol-gel method and characterized using FT-IR spectroscopy, X-ray diffraction (XRD), Scanning Electron Microscope (SEM) and Transmission Electron Microscope (TEM). The determination of ^{99}Mo adsorption capacity of these materials were carried out by soaking the materials in $Na_2{}^{99}MoO_4$ solution of pH 3 and 7, at temperatures ranging from room temperature to 90 °C, for 1 and 3 hours. The results indicated that monoclinic nanozirconia has ^{99}Mo adsorption capacity of 76.9 mg Mo/g, whereas orthorhombic nanozirconia, sulfated zirconia and fosfated zirconia have ^{99}Mo adsorption capacity of 150.1 mg Mo/g, 15.58 mg Mo/g, 12.74 mg Mo/g, respectively. It appears that orthorhombic nanozirconia has the highest ^{99}Mo adsorption capacity among the synthesized materials and can be applied as a candidate material for ^{99}Mo/^{99m}Tc generator.

Keywords: low specific activity 99Mo; zirconia; adsorption capacity; 99Mo/99mTc generator.

ID-165

Identification of adequate nutrients for toddler by means of information system

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We present an identification of adequate nutrient for toddler using artificial neural network perceptron. The artificial neural network was able to identify and classify the status of toddler´s nutrients into three classes, i.e. hypo-, normal-, and hyper-nutrients. The variables used in this classification were gender, age, weight, and height. Toddler´s activity was observed for only 37 until 60 months old. The precision value reached of more than 80 %, for different number of testing data. Rule based system was used for determining the meal menu adequate to the calories needs. The calorie needs for up to 12 months was between 200 until 1100 calories, and for 13 until 36 months old toddler would need calories of 700 up to 1700, meanwhile 1140 to 1780 calories was necessary for toddler with ages between 37 up to 60 months.

Keywords: nutrients for toddler; ANN perceptron; calories needs

ID-166

Interpretation of conformity test results of PSA levels between CRRT NNEA kit and Hungarian Izotop commercial kits on cancer and non-prostate cancer cases

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Prostate cancer is a disease that develops in the male reproductive system, cancer cells can spread to lymph nodes and bone. In men prostate cancer causes death of about 2-3%. Prostate cancer prevention is done by early screening in men aged over 40 years old. PSA is an enzyme that is released by the prostate gland, and measurements are used IRMA PSA kits can also be with ELISA kits. The Center for Radioisotope and Radiopharmaceutical Technology (PTRR) has succeeded in making PSA-IRMA kits such as tracers, PSA coated tubes and standards that yield% NSB of 0.9 and %B/T of 19.57% which have met the requirements of good kit (% NSB <2% and % B/T> 10%) with a standard calibration curve having a high confidence level shown by R2 value 0.998 and linear equation Y = 0.2346X + 0.922. Further research obtained sensitivity of 11.76% and 94.80% specificity with an accuracy of 85.96%, using normal patient serum from Batan employee Puspitek Serpong area with standard raw kit PSA IRMA Izotop Hungary. The purpose of this study was to determine the suitability between serum PSA results using PTRR Batan reagent kit with Hungarian Izotop commercial kits reagents on cancer and non-prostate cancer cases at Fatmawati and Dharmais General Hospital and Hasan Sadikin General Hospital. From the results of this study, the sensitivity of 95%, specificity 92.96% and accuracy 92.21% with Kappa 0.8426, 95.00% positive guess, 89.19% negative prediction and very good suitability with Kappa index 0.84%

Keywords: Prostate Specific Antigen; immunoradiometricassay; prostate cancer.

ID-167

Optimization of Iodine-131 Labeled Interferon Alfa-2a-Human Serum Albumin (131i-Rhifna2a-Hsa) for Alternative Therapy of Liver Cancer

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Prostate cancer is a disease that develops in the male reproductive system, cancer cells can spread to lymph nodes and bone. In men prostate cancer causes death of about 2-3%. Prostate cancer prevention is done by early screening in men aged over 40 years old. PSA is an enzyme that is released by the prostate gland, and measurements are used IRMA PSA kits can also be with ELISA kits. The Center for Radioisotope and Radiopharmaceutical Technology (PTRR) has succeeded in making PSA-IRMA kits such as tracers, PSA coated tubes and standards that yield% NSB of 0.9 and %B/T of 19.57% which have met the requirements of good kit (% NSB <2% and % B/T> 10%) with a standard calibration curve having a high confidence level shown by R2 value 0.998 and linear equation Y = 0.2346X + 0.922. Further research obtained sensitivity of 11.76% and 94.80% specificity with an accuracy of 85.96%, using normal patient serum from Batan employee Puspitek Serpong area with standard raw kit PSA IRMA Izotop Hungary. The purpose of this study was to determine the suitability between serum PSA results using PTRR Batan reagent kit with Hungarian Izotop commercial kits reagents on cancer and non-prostate cancer cases at Fatmawati and Dharmais General Hospital and Hasan Sadikin General Hospital. From the results of this study, the sensitivity of 95%, specificity 92.96% and accuracy 92.21% with Kappa 0.8426, 95.00% positive guess, 89.19% negative prediction and very good suitability with Kappa index 0.84%

Keywords: Prostate Specific Antigen; immunoradiometricassay; prostate cancer.

ID-168

Predictors of Medication Adherence Behavior to Secondary Stroke Prevention Therapy

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Patients who survive from a primary stroke will have 25% chance to experience recurrent stroke within 5 years. The success of secondary prevention depends on the adherence of patients to take the medications. This research was carried out to investigate patients' self-reported factors associated with secondary stroke prevention medication adherence.

Consecutively 96 outpatients with stroke in a public hospital in Central Java were recruited. The adapted Morisky Modified Scale (MMS) was used to measure medication adherence. Personal factors evaluated in this study including: Social support which was evaluated with Multidimensional Scale of Perceived Social Support (MSPSS), treatment related factors, patient related factors, health-care system related factors and key socio-demographic factors.

Non-adherence to the secondary stroke prevention therapy was reported by 18.8% patients. Social support, socio-demographic factors, health care system related factors were not associated with respondents' non-adherence to their medications. However, treatment related factors such as number of medications (OR=9.62, $p<0.05$), medications' side effects (OR=3.90, $p<0.05$), and fear of addiction to medication (OR=9.62, $p<0.05$) were associated with medication non-adherence. The study highlighted that treatment related factors were independent predictors of medication non-adherence in secondary stroke prevention therapy.

Keywords: medication adherence; stroke prevention.

ID-169

Renewable Energy System for Health Care Facilities at Rural and Remote Areas in Indonesia

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The reliability of electric power supply is considered a vital commodity towards the development of health care in rural/ remote areas. The lack of which has limited its efficient delivery in many rural communities, thus putting human lives at risk. Indonesia as an archipelago country located in equator has abundant of renewable energy sources, such as solar, hydro, biomass, etc. Unfortunately, development of those renewable energy sources are not growing as expected. There are some constraints slowing the growth, among others site-specific problems and high investment costs. The study focused on assessment of renewable energy supply options for rural health care facilities, and techno-economic feasibility of utilizing off-grid PV systems to meet the load of a typical rural health care facility at the selected sites. The optimum dimensions of the system are defined for the locations. Hybrid Optimization Model for Electric Renewable (HOMER) was employed to conduct the study. The results indicated that the use of off-grid PV system is a cost-efficient solution for the energy supply for rural areas that are not connected to the national grid. This indicates that renewable energy systems can be a reliable energy supply option for rural health care facilities in rural/remote areas.

Keywords: renewable energy system, PV system, rural health care, HOMER, remote area

ID-170

Serum 25-Hydroxyvitamin D (25(OH)D) Determinants In Female Young Adults of Minangkabau Ethnicity

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Recent studies show that vitamin D play complex roles in reproductive system. Sunlight exposure is a main source of vitamin D. However, recent studies showed that living in a tropical country does not guarantee serum 25(OH)D sufficiency. This study was performed to explore factors related to serum 25(OH)D in female young adults.

Participants were 80 female of Minangkabau ethnicity aged 17-25. Dietary intake was assessed using food recall method. Data were collected on body mass index, duration of sunlight exposure, percentage of sun-exposed skin, skin pigmentation, sunscreen application, sleep quality and circadian behavior. Serum 25(OH)D level was measured by ELISA. Predictor of serum 25(OH)D was analyzed by multiple linear regression.

Almost all subjects (n=78; 97.5%) were deficient in serum 25(OH)D. In our model (adjusted R^2=0.776), vitamin D intake was a positive predictor of serum 25(OH)D level (β=0.347, p<0.001), while sunscreen application (β=-0.235, p<0.001) and sleep quality (β=-0.431, p<0.001) were negative predictors of serum 25(OH)D level.

Most of female young adults in this study are deficient in vitamin D and vitamin D intake is the major determinant of serum 25(OH)D level in these subjects. Vitamin D-rich diet is recommended to female young adults for future reproductive health.

Keywords: female; Minangkabau; reproductive; 25(OH)D; vitamin D.

ID-171

Physicochemical Properties of Denatured Whey Protein Concentrate as Food Texture Controller Produced at Various Heating Time

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Dairy processing industry in particular cheese processing, produced side product such as whey which has a high nutritional component. One of the method to overcome the side product of cheese processing is to produce Whey Protein Concentrate (WPC) that can be used as food texture controller by means of can be added into food formulation without giving excessive change in texture. Denatured whey protein as affected by heat treatment causes a conformational change of whey protein and cause the change of its native properties. This study aims to evaluate the characteristics of the denatured WPC heated at 90°C for different heating time of 30 minutes, 60 minutes and 90 minutes. Experimental methods used was descriptive analysis. Whey and fat were separated from milk, meanwhile whey protein was isolated at its isoelectric point, follows by heat treatment, centrifugation, drying. The result showed that increasing the heating time up to 60 min in denatured WPC production affect significantly on the increase in the yield (0.66%) and solubility (28.3%), decrease the viscosity (1.3 mPa.s), and did not affect protein content (55.38%), lactose content (47.46%), moisture (6.61%), lightness, and particle size distribution. These properties were suitable for denatured WPC to be used as texture controller in whey protein based-food production.

Keyword : milk, whey protein concentrate, denatured, heating time, texture controller

ID-172

Naringenin Inhibits Colony Formation and Mammosphere Forming on Mammosphere from MCF-7 Cells

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One mechanism of cancer cell resistance to chemotherapy is the presence of a population of cancer stem cells (CSCs), in which cancer cells are able to differentiate causing metastasis. Modelling CSCs with spheroid assay (3D) is widely used to test various chemotherapy agents and as a model that approach the original tumor. Naringenin (Nar),one of flavanone compound commonly found in orange and grape, is known for its chemoprevention property through inhibition of cancer cells. This study aimed to explore Nar in inhibiting CSCs with 3D tumorsphere of breast cancer cells (mammosphere) from MCF-7 cells. Experiment was performed by colony formation assay (CFA), mammosphere forming potential (MFP) assay, and cell cycle modulation test using flowcytometry. The result showed that 100μM Nar could inhibit colony formation until 60,67%, meanwhile mammosphere forming on untreated and Nar treatment are 124,67±5,69 and 57,67±11,02, respectively. Nar treatment induced sub-G1 and G0-G1 phase arrest on 2D model (MCF-7 cell line) but not on 3D model. It was concluded that Nar were able to inhibited colony formation and mammosphere forming.

Keywords: naringenin; breast cancer; cancer stem cells; mammosphere.

ID-173

Effect of *Mansoa alliacea* Ethanolic Extract on Healing Process of Surgical Wounds in Rats

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Mansoa alliacea (MA) has anti-oxidant and anti-inflammatory properties and may enhance wound healing process. The present study, therefore, was aimed to examine the effect of *Mansoa alliacea* ethanolic extract (MAE) on wound healing process.MAE was obtained from maceration using 96% ethanol and then formulated into various concentrations of ointment dosage forms. For this experimental study, 30 healthy male Wistar rats were randomly designated to six groups of A, B, C, D, E, and F which, respectively treated with, 3% MAE ointment, 6% MAE ointment, 12% MAE ointment, povidon iodine, base ointment, and untreated for 21 days. Wounds length and area were measured by caliper every two days. Data were analyzed by SPSS 19 using repeated ANOVA, one-way ANOVA, and Mann Whitney. $P<0.05$ was considered as statistically significant.

Keywords: mansoa alliaceae; ethanol extract; healing Process; surgical wounds; wistar rats.

ID-174

Cytotoxic Activity of Ethanolic Extract from Sugar-Apple (Annona Squamosa L.) Stem Bark on T47D Cells

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Sugar-apple (Annona squamosa L.) is one of the plant that has efficacy as an anticancer. Several previous studies showed that compounds in the leaves and seeds of sugar-apple have anticancer activity. The study was conducted to explore the cytotoxic potential of ethanol extract of the bark sugar-apple on T47D breast cancer cells. Ethanol extract of the bark of Sugar-apple (Annona squamosa L.) obtained using the maceration method with ethanol solvent. Cytotoxic test performed by the MTT assay using 4 series of concentrations (500, 250, 150, and 100 ug / mL). The potential toxicity of ethanol extract of the bark of Sugar-apple (Annona squamosa L.) against cancer cells was calculated based on the percentage of inhibition T47D cells line then calculate the IC_{50}. Compound the ethanol extract of the bark of Sugar-apple (Annona squamosa L.) performed by Thin Layer Chromatography (TLC) using a mobile phase of hexane: ethyl acetate (7:3) v / v and the stationary phase silica gel GF254. Spot detection using $FeCl_3$ spray reagents, sitroborat, and Dragendorff. The results showed that ethanol extract of the bark of Sugar-apple (Annona squamosa L.) has a less potent cytotoxic activity against cancer cells T47D with IC_{50} values is 237.317 µg / mL. TLC results showed that ethanol extract of the bark of Sugar-apple (Annona squamosa L.) contain flavonoid, alkaloids, and polyphenols.

Keywords: cytotoxic; Annona squamosa L.; T47D cells; ethanol extract.

ID-175

Cytotoxic Activity of Ethanolic Extract from Sugar-Apple (Annona Squamosa L.) Stem Bark on T47D Cells

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Zerumbone is a plant-derived phytochemicals that has been reported to have many activities, including anticancer. However, the application of this compound was limited due to its low water solubility. In this study, the zerumbone was loaded into oleic acid-modified chitosan nanoparticles and its cytotoxic activity against cancer cells in vitro was assessed. The antiproliferative effects of zerumbone loaded chitosan-oleid acid nanoparticles were evaluated in T47D breast cancer cells using MTT cytotoxicity assay. In addition, flow cytometry assay was conducted to evaluate the cell cycle alteration and apoptosis induction in the cell lines following exposure to zerumbone alone and zerumbone nanoparticles. The results showed that zerumbon-loaded chitosan and zerumbone-loaded chitosan-oleic acid nanoparticles inhibited the growth of T47D breast cancer cells with the IC_{50} of 58.91 and 45.65 µg/mL, respectively. These results were higher than the IC_{50} of free zerumbone which was 98.36 µg/ml. Flow cytometry results demonstrated zerumbone nanoparticles induced T47D cell death through apoptosis and necrosis

Keywords: apoptosis; nanoencapsulation; zerumbone; chitosan; anticancer.

ID-177

Potential Drug Interaction of Oral Hypoglycemic Agents in Type 2 Diabetes Mellitus Patients at Dr. M. Djamil Hospital Padang: A Retrospective Study

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Drug interaction is the one of the eight drug related problems categories that may affect patient clinical outcome. Increasing complexity of drugs which be used in the treatment and polypharmacy can increasing the probability of the drug interaction. The purpose of research is to review and identification potential interaction of hypoglycemic oral drug in diabetic patient at RSUP Dr. M. Djamil Padang. This research used non-experimental methodology with analysis descriptive in a retrospective way. Data was taken by using purposive sampling. Data analysis using Fisher Test on SPSS 17.0 program.Based on result of this study, 119 patient that include to the inclusion criteria and 32,8% of the patient have a potential drug interaction of hypoglycemic oral. The type of drug interaction were pharmacodynamics 58,54% and pharmacokinetic 41,46%. Based on the potential drug interaction which discovered, the most severity of drug interaction was moderate which is 91,46%. Drug combination that often have potential interaction was metformin and furosemid. Analysis statistics showed that there was no relation between hypoglycemic oral drug with clinical outcome patient ($p<0,05$). And based on the result, it can be concluded that there is potency of hypoglycemic oral drug interaction in diabetic patient at RSUP Dr. M. Djamil Padang.

Keywords: drug interaction; diabetes mellitus; oral Hypoglycemic drugs; drug related problems.

ID-181

Sunlight Exposure-Related Factors and Their Association With Urinary 8-hydroxydeoxyguanosine (8-OHdG) in Female Young Adults

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Sunlight exposure to skin cells can cause photooxidation due to reactive oxygen species (ROS) release. ROS induces oxidative stress and the formation of 8-OHdG, a DNA damage marker. This study aimed to analyze sunlight exposure-related factors with urinary 8-OHdG levels in a homogenous group of Minangkabau female young adults. The research was a cross-sectional study on female medical students of Andalas University selected by systematic random sampling (n=110). Ratio of sunlight-exposed skin, duration of sunlight exposure and sunscreen use were collected using questionnaire and urinary 8-OHdG was measured by ELISA. Statistical analyses were performed by using Pearson's correlation, one way ANOVA/Kruskal-Wallis, and partial correlation.

Average body surface area exposed to sunlight was 9.83±2.68%, average duration of sunlight exposure was 49.01 ± 36.96 minutes and 35.5% of the subjects regularly used sunscreen. There were significant correlations between sunlight-exposed skin area (r=0.195, p=0.021) and sunscreen use (p=0.001), however there was no significant correlation between duration of sunlight exposure (p=0.396) and urinary 8-OHdG levels. Partial correlation test showed significant correlation between sunscreen use with urinary 8-OHdG (r=-0.037, p=0.001).

Sunscreen use may protect the skin from sunlight-induced DNA damage in Minangkabau female young adults.

Keywords: oxidative stress; body surface area; sunlight exposure; sunscreen; 8-OHdG.

ID-185

Application of High Performance Thin Layer Chromatography-Densitometry and UV- visible Spectrophotometry for The Simultaneous Determination of Thiamine in Green Beans

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Two methods are described for the simultaneous determination of thiamine in green beans. The green beans were grinded and thiamine was extracted as bases into distilled water, separated by the first method, HPTLC silica gel 60 F_{254}plate using methanol: water: acetic acid: ammonia (5:4.5:0.5:0.75) as mobile phase followed by densitometry measurement of its spot. The second method, a highly sensitive colour reaction has been developed. Thiamine was reacted with bromothymol blue to form an ion association complex in a weak base aqueous solution in the presence of some solubilization agents such as polyvinyl alcohol and analyzed by using UV- visible Spectrophotometry. The solution was measured at a maximum absorbance length of 430.5 nm. The first method showed that the detector response was linear for concentrations between 100-500 mg/mL (r =0.998). The limits of detection and quantitation were 33.7 mg/mL and 113.1 mg/mL, respectively. The second method was found to offer good linearity (18-26 mg/mL, r=0.998) with 0.6 mg/mL limit of detection and 1.9 mg/mL limit of quantitation. Thiamine contents from both methods were analyzed. The result showed that average contents of thiamine from both methods were 0.0396% and 1.0009%, respectively. The two proposed methods were successfully applied to the determination of thiamine in green beans.

Keywords: green beans; HPTLC-densitometry; spectrophotometry UV/Vis; thiamine.

ID-186

Antiproliferation and Antimigration Activities of Pgv-1 on Triple Negative Breast Cancer Mda-Mb-231 Cells

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Triple negative breast cancer (TNBC) is the type of breast cancer that is characterized by low expression of progesterone, estrogen, and HER2 receptor. This type of cancer is agressive and highly metastatic. Pentagamavunon 1 (PGV-1) is one of curcumin analogues that was developed by CCRC Faculty of Pharmacy Universitas Gadjah Mada. PGV-1 is more stable than curcumin and also has lower IC_{50} than curcumin in several breast cancer cells. The aim of this research was to explore PGV-1 effect on MDA-MB-231 proliferation and migration. Based on MTT assay, PGV-1 showed moderate antiproliferation activity towards MDA-MB-231 cells at 24 hours and 48 hours of treatment with the IC_{50} >20 µM and 12 µM, repectively. Observation from scratch wound healing assay showed that PGV-1 at 1.25 µM, 2.5 µM, and 5 µM had antimigration activity. Further observation of antimigration using collagen I coating-wound healing assay showed that PGV-1 at 5 uM inhibited migration of MDA-MB-231 cells up to 50%. In conclusion, PGV-1 is potential to be developed as antiproliferation and antimigration on triple negative breast cancer cells.

Keywords: PGV-1; antimigration; antiproliferation; MDA-MB-231; curcumin.

ID-188

The Activity of Ethanolic Extracts of Piper aduncum, L. on Total Cholesterol, Triglycerides, HDL, and LDL

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Forest betel *(Piper aduncum* L.) is one of the plant that is widely used as a traditional medicine. This study aimed to investigate the effect of forest betel leaf extract *(Piper aduncum* L.) on total cholesterol, triglycerides, LDL and HDL on hypercholesterolemia Swiss-Webster mice. Swiss-Webster mice was induced by high-fat foods and propylthiouracil (PTU) dose 0.26 mg/20 gram BW. The animals are grouped into six groups: negative control, positive control, extract dose of 25 mg/kg, 50 mg/kg BW, 100 mg/kg BW and a comparator group. Forest betel extract *(Piper aduncum* L.) was administered orally for 14 days. Ethanolic extract of forest betel *(Piper aduncum* L.) can reduce total cholesterol, LDL and increase HDL levels significantly ($p < 0.05$). Dose of 50 mg/kg BW and 100 mg/kg BW decrease total cholesterol and LDL. Dose of 25 mg/kg BW and 50 mg/kg BW increased HDL levels. Ethanolic extract of forest betel can lower cholesterol levels and LDL cholesterol, but increase HDL levels.

Keywords: Piper aduncum L.; total cholesterol; triglycerides; LDL; HDL.

ID-192

Boron Microdistribution and Radiobiological Evaluation of Pentagamaboronon-O and Its Complex on Several Types of Breast Cancer Cells

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Boron neutron capture therapy (BNCT) is an advanced cancer therapy by combining boron carrying pharmaceutical (BCP) and neutron irradiation. Pentagamaboronon-0 (PGB-0) including its fructose complex (PGB-0-F) and sorbitol complex (PGB-0-Sor) are novel BCP from Indonesia. In this research, we aim to evaluate the boron microdistribution and radiobiological effectiveness of PGB-0 and its complex toward several types of breast cancer cells. MCF-7, MCF-7/HER2, and 4T1 cells were used as the model of breast cancer cells. Measurement of Boron Microdistribution was conducted by Inductively Coupled Plasma Emission Spectrometry (ICP-ES). Cells were exposed to neutron thermal beams (1.2 x 10^{13} n/cm^{2}s) in the presence of PGB-0 and its complex at Kartini Reactor, BATAN then was determined the cytotoxicity by MTT Assay. Based on ICP-ES, PGB-0 showed highest accumulation on MCF-7 cells in amount of 2.17 x 10^{20} B atom/cells, while PGB-0-F was mostly accumulated on 4T1 cells in amount of 8.94 x 10^9 B atom/cells, and PGB-0-Sor performed highest accumulation on MCF-7/HER2 cells in amount of 2.33 x 10^{12} B atom/cells. Under in vitro radiobiological assay on MCF-7/HER2, all of compounds performed cytotoxic effect which PGB-0-Sor was the most potent one. In vitro radiobiological assay on MCF-7 and 4T1 or the other cells will be reported further.

Keywords: PGB-0; BCP; BNCT; boron microdistribution; radiobiological assay.

ID-196

Activity of ethanol extract of Gynura procumbens (Lour) Merr. to glucose level and pancreatic histopathology of white male mice which induced by alloxan

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Diabetes mellitus is a chronic condition characterized by elevated blood glucose levels (hyperglycemia) caused by lack of insulin as a result of impaired insulin secretion. One way to overcome diabetes mellitus is to do a therapy called herbal therapy. Research on extract ethanol (Gynuraprocumbens (Lour) Merr.) Test to decrease blood glucose level and pancreatic histopathology in male alloxan induced mice has been done. Animals were divided into 5 groups consisting of negative control, positive control, dose group 50 mg / kg BW, 150 mg / kg BW, 300 mg / kg BW. The extract was given for 7 days orally. The results data were analyzed by one-way ANOVA and continued with Duncan test. The results showed a decrease in blood glucose levels and significantly improved pancreatic beta cells ($P < 0.05$), which means that ethanol extract of life-leaf (Gynuraprocumbens (Lour) Merr.) Can lower blood glucose levels and improve the pancreatic picture has been broken

Keywords: Gynura procumbens (Lour) Merr.; glucose level; pancreatic histopathology; alloxan.

ID-197

Validation of Analysis Method and Determination of Citicoline in Tablet Dosage Form by Thin Layer Chromatography-Densitometry

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A simple, precise, accurate and rapid thin layer chromatography-densitometry (TLC-Densitometry) has been developed and validated for determination citicoline in tablet dosage form. Normal phase thin layer chromatography plate (silica gel 60 F254) was used as stationary phase and methanol: water: Ammonia (8:1:1) as the mobile phase. Citicoline showed Rf value of 0,71 and evaluation was performed by densitometry (TLC-scanner) at 273 nm. The calibration curve was found to be linear with the correlation coefficient R= 0,9993. The limit of detection (LOD) and the limit of quantification (LOQ) of the method was respectively 15,744 µg/mL and 52,48 µg/mL. Precision (% RSD intraday was 0,86-1,41 and interday was 1,43-1,65). Recovery analysis were found to be 101,32%, 97,70% and 98,06 %. According to the results, this method was in accordance with good validation requirements.

Keywords: thin layer chromatography-densitometry; citicoline; validation.

ID-198

Comparative study of the eggshell and the activated carbon adsorption capacity ratio to the lead metal contamination

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A research of comparing the adsorption capacity ratio of eggshell and activated carbon to lead metal contamination has been done. The experiments were conducted on heavy metal lead solutions using eggshell powder and activated carbon as adsorbents. Compared to activated carbon, it was found that the eggshell powder has relatively higher adsorption capacity. The highest amount of adsorbed lead metal using the eggshell adsorbent is obtained within the concentration of 432.05 mg/L as much as 21.60 mg/g. While the highest amount of adsorbed lead metal using the activated carbon adsorbent is obtained within theconcentration 858.2 mg/L as much as 7.26 mg/g. The highest effectiveness of lead adsorption by using the eggshell adsorbent is 99.98 % in 432.05 mg/L concentration with a weight of 1 gram of adsorbent. In the other hand, the highest effectiveness of lead adsorption by using the activated carbon adsorbent is 56.14 % in 35.03 mg/L concentration with a weight of 1 gram of adsorbent

Keywords: eggshell; activated carbon; lead metal.

ID-199

Khemopreventif Test of Ethanol Extract of Mandarin Orange Peels and Tea Leaves on T47d Breast Cancer Cells With in Vitro Method and in Silico

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Breast cancer is one of the diseases that have the highest number of morbidity and deaths in Indonesia and most suffered by women. Treatment of cancer with chemotherapy agents many side effects that can reduce the quality of life of patients. For that need to look for khemopreventif agent is relatively safe and minimal side effects, including with natural ingredients. One of the plants that can be developed as a chemopreventive agent is tea leaves *(Camellia sinensis)* and orange peel *(Citrus reticulata)* which is proven to inhibit the proliferation of cancer cells.

This study aims to determine the antioxidant activity of tea leaf extract and orange peel against T47D breast cancer cells in *In Vitro* and *In Silico* and obtain optimal results that can be developed as a chemotherapy agent.

This research includes the extraction process of orange peel and tea leaves by maceration method. Antioxidant test using DPPH method. And test in silico using Vina Autodock Software by deprecating *Tangeretin* and *Kaemferol* compounds against target protein Bcl-XL. And TLC method uses Silica Gel.

The results of this study indicate antioxidant activity in breast cancer cells T47D with IC_{50} 83,00 µg / ml. Whereas in molecular docking, *kaemferol* compounds have an affinity of -6,4 kcal / mole, the *Tangeretin*compound has an affinity of -5,8 kcal / mol. In klt results obtained his Rf value on orange peel extract 0,87 and tea leaf extract 0,65. From the results obtained can be said that the ethanolic extract of orange peel and tea leaf has the potential as a chemopreventive agent in breast cancer.

Keywords: orange peel; tea leaves; molecular docking; antioxidant test; TLC.

ID-200

In Vitro and In Silico Chemical Activity Test of Combination Ethanolic Tea Leaf Extract (Camellia sinensis) and Mandarin Orange Peels (Citrus reticulata) on Breast Cancer Cells MCF-7

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Breast cancer is one type of cancer that kills and can attack women and men with a high prevalence rate. Cancer treatment is generally done by chemotherapy, surgery or radiation methods. But such treatment in addition to expensive prices also causes adverse side effects. To overcome this, the need for breast cancer prevention innovation, one with the exploration of natural materials. The objective of this study was to examine the activity of a combination of tea ethanolic extract (*Camellia sinensis*) and mandarin orange peels (*Citrus reticulata*) as a breast anticancer agent on MCF-7 cells in vitro and in silico.

This study started with TLC method, molecular docking on HER-2 and DPPH Antioxidant test. Extraction by maceration method using 70% ethanol solvent. molecular docking of Autodock Vina on HER-2 protooncogenes and DPPH antioxidant methods to determine KTJ levels capable of inhibiting 50% free radical (IC50).

From research is known Rf value of tea and orange extract at TLC equal to 0,65 and 0,87 with routine comparator (Rf 0,71 and 0,81). Score docking of tangeretine and EGCG compounds of -6.6 and -5.0 with a doxorubicin agent docking ratio of -4.5. IC50 KTJ 83,00 µg / ml with routine comparison with IC50 value 14,19 µg / ml. Based on these results it can be concluded that KTJ has a strong potential as a chemopreventive agent in breast cancer cells MCF-7

Keywords: *Camellia sinensis; Citrus reticulate*; molecular docking; antioxidant test; breast cancer MCF-7.

ID-201

Study of Urban Community Understanding of Waste Disposal and Management

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In a study called The Study of Urban Community Understanding of Waste Disposal and Management, researcher have conducted studies and collected data on how the understanding of the community of Sabang City as one of the tourist destinations in Indonesia, related to garbage disposal and integrated management. The purpose of this study is to know how the understanding of the people of Sabang City, particularly Ie Meulee Village as part of the tourist destination. The data sending technique used in this research is survey method using questionnaire and interview method using interview guidance instrument. To know the level of understanding of respondents in Ie Meulee Village related to garbage, the researcher stands 10 main questions and 2 supporting questions on the questionnaire. From the information data collected with the respondent's understanding, overall it can be said that 26% of Ie Meulee Village respondents are well-informed about waste, while 49% have understood, 24% are still lacking in understanding and 2% do not understand about waste disposal. However, Almost all (98%) of Ie Meulee villagers state that a clean environment is very influential for the advancement of the tourism industry.

Keywords: Ie Meulee Village; Sabang; waste disposal; waste management.

ID-202

Optimization Formula of Alpinia galanga L. Extract, Piper nigrum L. Extract and its Cytotoxic Effect on 4T1 cells

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The cytotoxicity of languas (*Alpinia galanga* .L) are scientifically proven to cells MCF-7 and HL-60. While black pepper (*Piper nigrum* L.) has been reported of its cytotoxic effect to HeLa cell lines. In this study, we explore the cytotoxic activity of languas formulated extract (LFE) and black pepper formulated extract (BPFE) on 4T1 breast cancer cells compared respectively to Languas Extract (LE) and Black Pepper Extract (BPE). The cytotoxic activities were carried out using MTT Assay. Our results showed that the formulated extract revealed IC_{50} value 386 µg/ml for LFE and 137 µg/ml for BPFE . Meanwhile the crude extract revealed IC_{50}value 381 µg/ml for LE and 44 µg/ml for BPFE. The crude extract possessed cytotoxic activity on 4T1 cells greater than the formulated extract. While the each vehicle of both formulas, LFE and BPFE, revealed IC_{50}value 399 µg/ml and greater than 500 µg/ml respectively. Further research need to be explored to achieve the optimum formula for both extract related to raise cytotoxic effect by the delivery system

Keywords: alpinia galanga L.; Piper nigrum L.; formulated extract; cytotoxic; 4T1.

ID-203

Histomorphomotry Analysis of Aorta Isolated from HtrA1, HtrA3, and HtrA1;HtrA3 Knockout Mice

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A member of HtrA (high temperature requirement A) serine protease family protein, HtrA1, is implicated in various human diseases including arthritis, age-related macular degeneration, cancer, and a hereditary cerebral small vessel disease. HtrA3, another member, shows complementary expression pattern with HtrA1, and is also implicated in carcinogenesis. We previously reported that *HtrA1* knockout mice show abnormalities in their aorta including uneven thickening and elastic fiber degradation of aortic wall, and loss of medial vascular smooth muscle cell (VSMC). We have established *HtrA3* knockout and *HtrA1*;*HtrA3*double knockout mice to study HtrA3 function in vasculature. Fifty two-week-old mice with 129/B6 background were used. Serial sections from the upper half of the descending thoracic aorta were cut, and then stained with hematoxylin and eosin or elastica van Gieson for histomorphometry analysis. Our preliminary data showed that the media thickness of aortas from *HtrA1*, *HtrA3*, and *HtrA1*;*HtrA3* knockout mice was similar to wild type mice. However, medial VSMC numbers in *HtrA1* and *HtrA3* mouse aortas were significantly decreased as compared to wild type littermate. There was no difference in VSMC numbers among *HtrA1*, *HtrA3*, and *HtrA1*;*HtrA3* mouse aorta. Hence, we concluded that HtrA3 may also contribute in maintain normal vasculature. Further study using homogenous background and complete backcross mice is necessary.

Keywords: HtrA1; HtrA3; knockout; aorta; vascular smooth muscle cell.

ID-205

Evaluation of Antibiotic Use Pattern on Cesarean Section Patients in Obstetric And Gynecology Department of Dr M Djamil Hospital

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An evaluation of antibiotic use pattern on cesarean section patients in obstetric and gynecology department of Dr M Djamil hospital has been studied. The study was conducted in May - July 2012. This study included 106 caesarean section patients that met the study criteria (treated in the selected wards and have a complete data of leukocyte levels and body temperature). A Quantitative and qualitative analysis has been done using the pre-determined study standards. In general, the results show that the most used antibiotic is ceftriaxone (99.05 %), followed by Cefixime (35,84) and Amoxicillin (29,24). The study also shows that there is combination (16.98 %) and duplication (3. 77 %) of antibiotics. While an important finding to emerge in this study is the inappropriateness use of antibiotic. The study has shown that about 70% of the antibiotics are inappropriate in the selection, almost 50% inappropriate in duration of administration, and less than 10% inappropriate in indication and regiment

Keywords: antibiotic; antibiotic Prophylaxis; caesarean Section; Drug Evaluation.

ID-206

Anti-metastatic Activity of Galangal (Alpinia galanga L.) Ethanolic Extract on 4T1 Cells

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Metastatic becomes a major factor causing high mortality on breast cancer patients. Galangal (*Alpinia galanga* L.) is potential to be developed as an anti-metastatic agent. The aim of this study is to investigate galangal ethanolic extract (GEE) activity as an anti-metastatic agent through cells migration and MMP-9 expression. In this study, we used 4T1 cells as the model of highly metastatic breast cancer cells. GEE was obtained by ethanol maceration with percentage yield of 10% b/b. GEE performed not cytotoxic toward 4T1 cells based on MTT Assay. Under scratch wound healing assay showed that GEE tended to affects cell migration. This effect was confirmed under gelatine zymography assay, where MMP-9 expression was affected by GEE. Therefore, GEE is potential to be developed as an anti-metastatic agent. Molecular mechanism played role on an anti-metastatic activity of GEE needs to be explored further.

Keywords: alpinia galanga L.; anti-metastatic; anti-migration; MMP-9; 4T1 breast cancer cells.

ID-208

Evaluation of Outpatient Prescription Compliance in RSI Ibnu Sina Bukittinggi

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Prescriptions are written requests from doctors or dentists to pharmacists, whether in paper or electronic form to provide and deliver medicines to patients in accordance with applicable regulations. Pharmacists play an important role in preventing medication error by performing prescription screening to reduce the risks of harm in patients. The objective of the study was to evaluate the compliance of outpatient prescriptions at RSI Ibnu Sina Bukittinggi. This research has performed using descriptive observational with cross-sectional design. An amount of 119 prescriptions from July to September 2017 were collected. All prescriptions were screened for their compliance to Pharmaceutical Care Standard in Indonesian Hospitals, which consists of three criteria: 1) administrative requirements, 2) pharmaceutical compatibilities, and 3) clinical considerations, and derived into 21 subcriteria. Data analysis was performed using descriptive statistics. After screened thoroughly, there were no prescriptions which totally comply to the standard. There were only 10 of 21 subcriteria which were fulfilled by the prescriptions, which were R/ mark, patient name, patient address, dosage form, drug name, drug amount, drug dosage, drug potency, drug interaction, and drug duplication. It can be concluded that the prescriptions has not fulfilled the pharmaceutical care standard. Thus, hospital pharmacists need to improve pharmaceutical services.

Keywords: screening prescription; Pharmaceutical Care Standard; Medication error; Hospital.

ID-210

Health Related Quality of Life and Blood Pressure Control of The Diuretic Treated Patient With Congestive Heart Failure at The Yos Sudarso Private Hospital Padang

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A descriptive-analytical and cross-sectional study was made to examine the impact of diuretic therapy on the HRQoL and clinical outcome (SBP and DBP) of CHF patients at the Yos Sudarso Private Hospital Padang, Indonesia. Data of diuretic therapy and its combination, clinical outcome and social demography of 178 patients were collected from their medical records while The Minnesota Living with Heart Failure Questionnaire (MLHFQ) was used to measure patient's HRQoL. The T-Test and Kruskal-Wallis test were used to analyze the data and the significance level was taken at $p < 0.05$. Result showed that patients general HRQoL is fare (score 24 – 45 = 46%). Patient education, occupation, and sex effect HRQoL significantly ($p<0.05$) while the edge did not ($p > 0.1$). The type of diuretic and the number of therapy affected patient's HRQoL ($p<0.05$) but tent to affect patient SBP and DBP ($0,1>p>0,05$). The study indicated that the HRQoL of spironolactone diuretic and combination with other drug-treated patient is better than those treated with furosemide but their blood pressure is less controlled. On the other hand, blood pressure of furosemide and combination drug-treated patient is well-controlled but their HRQoL is not so well. A descriptive-analytical and cross sectional study was made to examine the impact of diuretic therapy to the HRQoL and clinical outcome (SBP and DBP) of CHF patients at the Yos Sudarso Private Hospital Padang, Indonesia. Data of diuretic therapy and its combination, clinical outcome and social demography of 178 patients were collected from their medical records while The Minnesota Living with Heart Failure Questionnaire (MLHFQ) was used to measure patient's HRQoL. The T-Test and Kruskal-Wallis test were used to analyze the data and the significant was taken at $p < 0.05$. Result showed that patients general HRQoL is fare (skor 24 – 45 = 46%). Patient education, occupation, and sex effect HRQoL significantly ($p<0.05$) while the edge did not ($p > 0.1$). The type of diuretic and the number of therapy effected patient's HRQoL ($p<0.05$) but tent to effect patient SBP and DBP ($0,1>p>0,05$). The study indicated that, the HRQoL of spironolactone diuretic and combination with other drug treated patient is better than those treated with furosemide but their blood pressure is less

controlled. On the other hand, blood pressure of furosemide and combination drug treated patient is well-controlled but their HRQoL is not so well.
Keywords: HRQoL; blood pressure; congestive heart failure; diuretic therapy.

ID-211

Development of ternary solid dispersions with HPMCP and PVP K30 for improving dissolution rate of glibenclamide

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Poorly-water solubility is typical properties of drug candidates being developed current time. There were many methods developed to increase solubility, dissolution rate, and bioavailability as well as the active substances are included in the biopharmaceutical classification system (BCS) II and IV. Development of solid dispersions by combining a highly soluble phase (hydrophilic) to enhance drug dissolution of poorly-water soluble drugs (hydrophobic) has a lot of consideration. Thus the use of solid dispersion is being made as one of the strategic efforts in improving the dissolution rate of drugs dissolved in water. This article provides an updated review of solid dispersion technique using HPMCP and PVP K-30 as a carrier. We also propose method of ternary solid dispersion using those polymers to improve dissolution rate of glibenclamide based on literature.

Keywords: solid dispersion; HPMCP; PVP K-30; glibenclamide.

ID-213

Antimicrobial Potency of Durian Rind Extracts (Durio Zibethinus) on Some Microbes Test in Vitro

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Durian (Durio zibethinus) is one of the medicinal plants that have the potential to be developed in the world of medicine. In Jambi, especially in the Selat area, durian becomes the main commodity and the utilization of durian fruits by the people of Jambi in the treatment has not been maximal. The compound content of 7,8-dimethoxy-13,13-dimethyl-2,13-dihydro-3H-Pyrano [5,6-c] quinoline 2-one (flavonoid) that has been isolated from the fruit pulps of the genus durian gives antimicrobial activity on some microbes test. This research was aimed to find out the antimicrobial activity of durian rind extracts (Durio zibethinus) on Staphylococcus aureus ATCC 25923, Escherichia coli ATCC 25922, Candida Albicans ATCC 10231 and the class of compounds. This research uses dilution and diffusion method (Kirby Bauer). The main parameters observed were MIC values and bacterial colonies. The research stages include extraction, TLC, qualitative and antimicrobial tests. The ethanol extract 96% concentration series used were 5% and 2.5%. The results showed that bacterial colonies which can grow at a concentration of 5% as many as 62; 29 and 136 colonies; 2.5% concentration as many as 63; 36 and 148 colonies of S.aureus ATCC 25923; E.coli ATCC 25922 and C.Albicans ATCC 10231. Based on MIC values, it is known that durian rind extract has potential as an antimicrobial agent.

Keywords: durio zibethinus; rind extracts; antimicrobial activity; MIC.

ID-214

Pharmacy Students' Readiness for Interprofessional Learning in West Sumatra, Indonesia: a Pilot Study

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Interprofessional education (IPE) is a foundation that leads to a collaborative,practice-ready workforce which later resulting in improved patient health outcomes. This study aimed to explore pharmacy students' readiness of interprofessional learning in West Sumatra, Indonesia. The population of this study was pharmacy students of Universitas Mohammad Natsir Bukittinggi (UMN) and Universitas Dharma Andalas (UNIDHA). A validated Indonesian version of Readiness for Interprofessional Learning Scale (RIPLS) questionnaire was utilized to measure students' readiness for interprofessional learning. The questionnaire were administered online to the students of both universities. Beside the questionnaire, students' data on age, gender, class year, IPE experience, and GPA were also collected. Logistic regression was used to analyze the relationship between students' characteristics and their RIPLS score. The data were evaluated from 46 and 41 pharmacy students of UMN and UNIDHA, respectively. Of 87 students in total, 49 (56.32%) students have high score on RIPLS. Students' home institution was the only factor that affect RIPLS score ($p < 0.05$; 95% CI = 0.108-0.828). Despite of the small sample size, this study results may provide insights on pharmacy students' readiness for interprofessional learning, which may help faculty members to introduce and develop suitable IPE program for the students.

Keywords: RIPLS; pharmacy students; Interprofessional Education.

ID-216

Anti-Migration and Anti-Invasion Activity of Piper Nigrum L. on 4t1 Metastatic Breast Cancer Cells

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High mortality of breast cancer patient is caused by metastasis. *Piper nigrum* L. that rich of piperine had been known for its anticancer activity. The aim of this study is to investigate the anti-metastatic activity of EEPN (Ethanolic Extract of *Piper nigrum*) on 4T1 breast cancer cells through inhibition of cell migration and MMP-9 expression. In this research, we used 4T1 cells as highly metastatic breast cancer cells model that highly invasive and express high MMP-9. The results showed that EEPN performed cytotoxic activity with IC_{50} value of 44 µg/mL based on MTT assay. Moreover, treatment with EEPN at concentration of 11 and 22 µg/mL affect the migration and MMP-9 expression on 4T1 cancer cells based on scratch wound healing assay and gelatin zymography. Thus, EEBP performs anti-cancer and anti-metastatic activities on metastatic breast cancer cells.

Keywords: *Piper nigrum* L.; metastatic; MMP; 4T1 breast cancer cells.

ID-218

Cytotoxic Evaluation of alfa Mangostin in Human Leukocyte Cell Culture in Vitro and Their Antioxidant Activity

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Mangosteen peel extract has been widely used as an herbal medicine for the treatment of various diseases and health care. The main chemical compound of mangosteen peel extract is α-mangostin. Bioactivity α-mangostin has been extensively tested on various organisms in vitro. However, information about its safety effects is not yet known. The study aimed to review the safety of α-mangostin by evaluating cytotoxic activity of α-mangostin to normal leukocyte cell culture and antioxidant activity of α-mangostin. Cytotoxic evaluation was performed using and antioxidant activity was performed using (DPPH assay). The range of α-mangostin concentrations were tested 3,125 µg/mL; 6,25 µg/mL; 12,5 µg/mL; 25 µg/mL; 50 µg/mL and 100 µg/ mL. The results indicated that α-mangostin compounds had no toxic effect on leukocyte cells. The α-mangostin compound was capable of triggering leukocyte cell proliferation response at 50 µg/mL with cell viability 208,485 ± 21,21% and at 100 µg / mL with cell viability 361,818 ± 86,37%. The α-mangostin compound also showed strong antioxidant activity with IC50 value of 13,57 µg/mL. The results of this study proved that α-mangostin compounds was not toxic in human leukocyte cells so safe for consumption. As an antioxidant compound α-mangostin was able to trigger the proliferation of leukocyte cells in leukocyte cell cultures.

Keywords: human leukocyte; cytotoxic; alfa mangostin; antioxidant.

ID-219

Evaluation of Antibiotic Usage among Diabetic Foot Ulcer Patients in Internal Medicine Ward of Dr. M. Djamil Padang Hospital

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Diabetic foot ulcer is one of complications that occurred in many patients with diabetes mellitus. An appropriate antibiotic usage is needed to overcome diabetic foot ulcer. It is expected to reduce bacterial resistance, minimize expenditures, and patient's length of stay. The aimed of the study was to obtain an overview of demography and clinical characteristics, usage of antibiotics, appropriateness of antibiotic therapy, and association between demography and clinical characteristics of clinical outcome and rationality of antibiotics usage. The prospective method were applied. A total of 26 diabetic foot ulcer from July-September 2017 were met the inclusion criteria. Majority patients were females 15 (57.69%), 45-65 years old 17 (65.38%), housewife 15 (57.69%), the patients have been suffered from diabetes <10 years old 11 (42.31%), length of stay 3-7days 9 (34.62%), suffered from ulcer 2 weeks-3 month 12 (46.15%), severe 24 (92.31%), clinical outcome improve and passed away 11 (42.31%). Overview usage of antibiotics showed metronidazole alone (16%), a combination of 2 antibiotics ceftriaxone + metronidazole (18%), a combination of 3 antibiotics cefoperazone + levofloxasine+metronidazole (4%). Appropriate assessment based on indication 26 patients (100%), on the drug 23 patients (88.46%), on the patients 26 patients (100%), on the dosage regimen 8 patients (30.76%), and no drugs interaction 22 patients (84.61%). Statistical analysis showed a not significantly correlation between characteristics values and toward clinical outcome and rationality antibiotics ($p>0.05$). It can be concluded that the utilization of antibiotic among diabetic foot ulcer patients are irrational.

Keywords: diabetic foot ulcer; antibiotic usage.

ID-220

Sub-acute administration of butanolic fraction of Cassytha filiformis L: Reversible nephrotoxicity study in male rats

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Sub-acute toxicity and reversibility study of the butanolic fraction of *Cassytha filiformis* L. on the renal function has been carried. A number of 36 male rats at the aged of 2-3 months, weight of ± 250 g were divided into 4 main groups which consisted of 1 control group and 3 fraction treated groups at doses of 2.5, 5 and 10 mg/kg administered orally once a day for 7 consecutive days. These groups were divided into 3 sub-groups, group A, B and C which were sacrificed on day 8, 10 and 14. The blood was withdrawn and the kidneys were taken to determine the renal function and to conduct histology observation. The percent changes of the renal function were analyzed by two-way ANOVA. The study showed that the renal function after 7 days fraction treatment was not significantly affected ($P>0.1$). The glomerular and renal histological damage on fraction treated groups were significantly higher than control ($P<0,05$). The renal function improved along with the decreased of renal histological damage after discontinuing the treatment. These indicate that the butanolic fraction of *Cassytha filiformis* L. at dose of 2.5-10 mg/kg is relatively toxic to the renal when used for 7 days, but reversible at dose of 2.5 mg/kg.

Keywords: cassytha filiformis; sub-acute; nephrotoxicity; reversible toxicity

ID-221

In Vitro Determination of Sun Protection Factor (SPF) of Leaf Extract Dadap Serep (erythrina Subumbrans (HAKS.) MERR.)

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Dadap Serep (Erythrina Subumbrans Haks Merr) contains bioactive compounds of flavonoids, saponins, isoflavones, alkaloids, and lectins. Flavonoid compounds have a sunscreen effect. This study has a purpose to determine the value of Sun Protective Factor (SPF) using spectrophotometry method with varying concentration of extract 500 ppm; 750 ppm; and 1000 ppm. The results showed that SPF of each concentration are 11.47 ± 0.583335; 17.05 ± 0,898838; 21.93 ± 0.791557. Ethanol extract of Dadap Serep has an ability as a sunscreen in the maximal and ultra category.

ID-222

Evaluation of Antibacterial and Antioxidant Activities of Solid Dispersion Usnic Acid – PVP K30

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Usnic acid, a secondary metabolite form Usnea sp, is well kwon to have antibacterial and antioxidant activities. This study was proposed to evaluate those activities from solid dispersion of usnic acid with PVP K30 compared to physical mixture and intact usnic acid. Solid dispersion was prepared by spray drying and freeze drying techniques at ratio usnic acid to PVP 1:2 (w/w). Antibacterial activities were conducted for Staphylococcus aureus ATCC 25923, Pseudomonas aeruginosa ATCC 27853, Proponibacterium acne ATCC 6919 and Steptococcus mutans ATCC 25175 using diffusion method. Amikacin and chloramphenicol were used as the positive control. In addition, antioxidant activity was determined using 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay using gallic acid as the comparison. The antibacterial activities test revealed that the largest diameter of inhibition zone was shown by freeze dried powder compared to spray dried, physical mixture and intact usnic acid. The result of antioxidant activity test showed the IC50 were 80.242, 63.867, 65.173, 79.958 µg/ml for intact usnic acid, freeze dried, spray dried and physical mixture powder, respectively. Meanwhile, the IC50 of gallic acid was 12.471 µg/ml. In conclusion, the antibacterial and antioxidant and activities were increased in the solid dispersion preparation, particularly of freeze dried powder.

Keywords: usnic acid; solid dispersion; PVP K30; antibacterial; antioxidant.

ID-223

The Effect of Milling Process to Penetration of Acyclovir Cream

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Acyclovir (ACV) is an antiviral drug used for the treatment of herpes simplex virus infection and varicella zoster virus infection. The objective of this study is to find out the influence of milling time toward penetration of ACV cream. The milling process used ball mill with variation of time in 1 hour, 3 hours, 6 hours. The Cream dosage form containing this milled ACV were formulated. The characters of cream observed by using stability test over a period of two months, drug content, pH, particle size, spreading test and irritation test. Vertical Franz cell diffusion studies were used to determine the in vitro penetration of ACV cream. Stability test showed that all of the formulations were completely stable. Particle size analysis showed milling process create aggregation. In the diffusion studies, observed a decreasing average amount of ACV diffused from cream dosage form contain milled ACV compared with cream ACV without milling.

Keywords: acyclovir; milling; cream; penetration.

ID-227

Physical Behavior of Chitosan Hydrogels Liquid Crystal and Film for Pharmaceutical Application : Preliminary Studies by Polarization Microscopy and X-Ray Diffraction

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Chitosan is a hydrocolloid polymer that can form a gel (hydrogel) and qualify as a liquid crystal (mesogen) forming and is widely applied in pharmaceuticals, such as drug carriers and cosmetics, increased solubility, drug release controls, and drug stability. The purpose of this study was to study the overview of physical chitosan hydrogels and film for pharmaceutical applications. Polarizing light microscopic and X-ray diffraction examination of the samples was carried out for this purpose of demonstrating the presence of LC domains. Based on previous research, chitosan hydrogels and film were made in citric acid 10 and 20% and tartaric acid in same concentration contain chitosan 12.5%. Caffeine hydrochloride which is not stable in water because of recrystallization was used as the model of the drug. The results showed there were changes of polarization for gel and film. All of sample Chitosan Hydrogel showed LC domains without recrystallization of caffeine, whereas the chitosan film showed difference polarization from it gels. There was crystallization of caffeine in Film samples. The diffractogram showed the only hydrogel in tartaric acid and citric acid 20% which were amorphous system. It means systems can inhibit recrystallization of caffeine. Meanwhile, hydrogel in tartaric acid and citric acid 10% showed semi-crystalline system. In conclusion, chitosan hydrogel in tartaric and citric acid 20% can inhibit recrystallization of caffeine.

Keywords: liquid crystals; mesogen; chitosan, amorphous.

ID-228

The White-Comiskey heroin epidemic model revisited

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The White and Comiskey heroin epidemic model [E. White, C. Comiskey, Heroin epidemics, treatment and ODE modelling, Math. Biosci. 208 (2007) 312–324.] is revisited. We find a small error in mathematical calculations of the existence of endemic equilibrium of the model. The correction to the error shows that the qualitative results remain valid. We also investigate that the endemic equilibrium of the model is stable. This indicates that a typical strategy may be needed to reduce prevalence and prevent an epidemic of heroin.

Keywords: heroin epidemics; equilibrium; stability.

ID-229

Preparation and Characterization of Usnic Acid-PVP K 30 Solid Dispersion

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Usnic acid is a most interested new drug candidate that have some pharmacology's activities, but this substance have a poor solubility. Its weakness caused a poor bioavailabilities of this drug. In order to increase its solubility, this drug will be formulated in solid dispersion system, using PVP K30 as a dispersion medium. This formulas then will be chatacterized its phisico chemical characteristics, ie particle size distribution, SEM, XRD, DSC and dissolution testing.

Keywords: usnic acid; PVP K30; solid dispersion.

ID-230

A Study on the Acute Toxicity of Quercetin Solid Dispersion as a Potential Nephron-protector

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Quercetin has been used with other nutraceutical components to improve renal function. Its development as an active pharmaceutical ingredient, however, is limited by poor aqueous solubility and low rate of dissolution leading to low bioavailability in rats (<17%) and in human (1%). Solid dispersion of quercetin with PVP K30 increased its solubility 13.24 times and the amount dissolved (95.12 $\pm$ 1.83) % compared to pure quercetin. This study aimed to determine the lethal dose (LD_{50}) of the solid dispersion in mice. The animals were divided into 5 groups, a control group (G1), and treated groups given quercetin solid dispersions at doses 2 g/kg BW (G2), 4g/kg BW (G3), 8g/kg BW (G4), and 16 g/kg BW (G5) respectively. Observation was done for 24 hours, and every day for 14 days if no death found. Results showed that no animal died after 24 hours. The treatment did not influence the average bodyweight significantly ($p>0.05$), but it significantly influenced the eating behavior ($p<0.05$). The weight ratios of the heart, the liver and the renal were not influenced significantly ($p>0.05$), but there was a decrease in renal function at doses 8 and 16 g/kg BW. In conclusion, the solid dispersion was relatively safe with the LD_{50} > 16 g/kg BW.

Keywords: quercetin; solid dispersion; acute toxicity; LD_{50}

ID-231

The Well Design Functions Shall be Accordance with Pharmaceutical Products

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Packaging design is very important in providing information about the products contained therein. The focus of this description is especially packaging for pharmaceutical products. The packaging of pharmaceutical products shall be in accordance with the pharmaceutical drugs contained therein. Packaging design should be able to inform for whom the drug is intended, for toddlers, adolescents, adults or elderly, more specifically for men, women, pregnant women, nursing mothers etc. Currently the technology used to make packaging is made of synthetic materials, in addition to weather resistance, hygiene, not easily weathered too easily formed material for storage and flexible when transporting and distributing. Many factors should be considered in selecting the packaging components for dosage forms of solid, liquid, flour to suit the product to the ease of use aspect. Overall, the design of pharmaceutical product packaging requires good planning and functions to provide a very clear marker, from color choices, symbols, typography so that easily anyone can understand it.

Keywords: packaging design, design function, pharmaceutical product, packaging pharmaceutical product

ID-234

a Study of Analgetic Effect and Subacut Toxicity of Kitolod Leaf (isotoma longiflora l.) Ethanolic Extract in Male White Mice

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A study on the analgesic effect and subacut toxicity of kitolod leaf (*Isotoma longiflora* L. Presl.) ethanolic extract in male white mice has been done. The experiment was conducted on 30 mice which divided into 6 groups i.e. negative control, positive control, comparison (mefenamat acid 65 mg/kg BW), and the ethanolic extract of kitolod leaf dose 1, 2 and 4 g/kg BW. The extract was given orally for 15 days. Analgesic activity was tested on day 1st, 5th, 10th and 15th. Pain was induced by acetic acid 1% b/v iply 1% BW. The parameters observed was that the number of stretching animals with writhing test method.. Subacut toxicity parameters were SGPT activity and serum creatinine level. The experimental animals were divided into 4 groups i.e. control group given Na CMC and ethanolic extracts of kitolod leaf groups with a dose of 1, 2, 4 g/KgBW, given orally for 15 days. The activity of SGPT and serum creatinine level were measured on day 1st, 5th, 10th and 15th using a spectrophotometer.

The research conducted found that kitolod leaf extract was proved effective as analgesic seen from the decrease in the number of strains of animals tested compared with the control. The greater the dose and the duration of administration, the analgesic activity of this extract is better. The ethanolic extract of kitolod leaf showed no effect on the activity of SGPT and serum creatinine level. This was seen in the absence of significant differences in the activity of SGPT and serum creatinine levels of the test group compared with the control group. Ethanolic extract of kitolod leaf has been proven active as analgesic and safe in use for 15 days.

Keywords: kitolod (*Isotoma longiflora* L. Presl.); analgesic activity; subacut toxicity.

ID-235

Identification and Screening Of Plant Based Antimicrobial Potential In Meurah Village Ie Jue (Geothermal Zone) Aceh Besar District

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Geothermal manifestation of Ie Jue area 2 Meurah Village (Outflow Geothermal Zone) Aceh Besar District has abundant biodiversity and potential source as medicinal plants. This research aims to determine the type species of plants and the contents of secondary metabolite, also to determine the antimicrobial activity of the methanol extract from plants that found in Ie Jue area 2. Transect method sampling was used to sampling of plants in Ie Jue Area 2 and the determination results of plants obtained three plants species were Ziziphus rufula Miq. (leaf and stem part), Oxyceros patulus (Horsf ex Schult.) Ridsdale (leaf and stem part), and Corchorus olitorius. L. (aerial part). The phytochemical screening results of the methanolic extracts of three plants species were prominently containing metabolites of saponins, tannins, alkaloids and steroids. The antimicrobial activity of methanolic extracts at 50% of concentrations were performed on three clinical isolates by using Kirby-Bauer method. The antimicrobial activity showed that all of the methanolic extract of all parts of plants that used had no inhibition zone activity against three clinical isolates of *Staphylococcus aureus, Escherichia coli,* and *Candida albicans*.

Keywords: Geothermal; Ie-Jue region; antimicrobial; *Staphylococcus aureus; Escherichia coli; Candida albicans*

ID-236

Preparation of Binary System of Usnic Acid-Saccharin with Improved Dissolution Rate

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The usnic acid is one of the major secondary metabolites isolated from the Lichen plant (*Usnea* sp). Usnic acid compounds have pharmacological activities such as anti-bacterial, anti-inflammatory and antioxidant. The widespread use of usnic acid in the pharmaceutical and cosmetic fields is limited by the low solubility and dissolution rate in water. This study aims to increase the rate of dissolution of usnic acid through the formation of binary systems with GRAS excipients saccharin. Binary system (equimolar) between usnic acid and saccharin was prepared by liquid assisted grinding method with methanol as a solvent on planetary ball milling apparatus. The solid-state properties of binary systems were characterized by powder X-ray diffraction analysis, thermal analysis DSC, FT-IR spectroscopy, microscopy SEM. The dissolution rate profile was performed with a USP type II dissolution testing apparatus. The dissolution medium of phosphate was buffer pH 7.4 solution and the temperature was maintained at 37 ± 0.5 °C. Concentration of usnic acid was determined by UV-Vis spectrophotometry at a maximum absorption wavelength of 286.5 nm. The results showed that the binary usnic acid (1: 1 mol) binary system has a lower melting point than the two originating components at 189.31 °C which is the eutectic temperature of the binary system. The Powder X-ray diffraction analysis of the binary system does not indicate the formation of a new crystalline phase that indicates the formation of a simple eutectic mixture. FT-IR spectroscopy analysis did not show any change in the transmittance pattern. The dissolution rate of usnic acid in the binary system increased 2.4 times more than intact usnic acid. The binary system of usnic acid -saccharin forms a simple eutectic mixture. The eutectic mixture of usnic acid can significantly increase dissolution rate and is an alternative technique for modifying the physicochemical properties of usnic acid compounds.

Keywords: usnic acid; saccharin; eutectic mixture; dissolution rate

ID-238

Antimicrobial and Cytotoxic Activities of Symbiotic Fungi Isolated from Marine Sponge Plakortis communis

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Isolation of symbiotic fungi producing antimicrobial and cytotoxic activities from marine sponge *Plakortis communis* collected from Mande, South Pesisir, West Sumatera has been done. Symbiotic fungi isolation was done by using cropping and casting method with sabouraud dextrose agar (SDA) as growth medium. Five isolates symbiotic fungi strains were obtained from this sponge *Plakortis communis*. Each fungi isolate was cultivated using rice medium for 40 days. The cultivation yield was extracted using an ethyl acetate solvent, from the extraction result obtained the weight of ethyl acetate extract which varied that 0.590-2.609 gram.The ethyl acetate extracts were analyzed for antimicrobial and cytotoxic activities by using agar diffusion method and BSLT. The study revealed two (40%) of the total extract had antimicrobial activity against pathogenic bacteria and fungal such as, *Staphylococcus aureus*, *Pseudmonas aeruginosa* and *Candida albicans*. While three extracts (60%) were cytotoxic activity with *Artemia salina* L. This selected fungal isolates were first macroscopically and microscopically characterized and later molecularly identified as *Syncephalastrum racemosum* and *Penicillium citrinum*. This study concluded that the symbiotic fungi of sponge Plakortis communis can be developed as a new source of antibiotic and anticancer compounds.

Keywords: symbiotic fungi; sponge, plakortis comunnis; antimikrobial activity; cytotoxic activity; *syncephalastrum racemosum, penicillium citrinum*

ID-240

Preparation and Characterization of Usnic Acid Nanocrystal with PVP K-30 using Wet Milling Method

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Since it first isolation in 1844, usnic acid has become most extensively studied lichen metabolite and one of the few that is commercially available. Due to its low solubility in water, it has been limited to prepare in pharmaceutical formulation. The aim of this study was to prepare usnic acid nanocrystal in order to enhance its solubility by using PVP K-30. Preparations were made in 2 formulas by varying PVP K-30 concentration then characterized to determined dissolution rate by dissolution tester and physicochemical characteristics (particle size, polidispersity index, and potential zeta) by using Particle Size Analyzer (PSA) and SEM. The highest dissolution enchancement was shown in F2 which gave 64.54% within 1 hour, compared to F1 and Usnic Acid which gave 59.06% and 30.09%. The results of statistical dissolution efficiency using ANOVA indicates there was correlation of addition PVP K-30 and nanocrystal preparation to usnic acid dissolution rate. Particle size and polydispersity index of F1 was 425.4 nm/ 0.579 and F2 was 388.5 nm/ 0.483 means preparations has fullfiled requirements for mean particle size of nanocrystal and monodisperse system. Potential zeta of F1 and F2 were 54.7 mV and 42.2 mV respectively. However, nanoparticle were not able to observe properly by using SEM. It's shown nothing but nanoparticle disperse system has been successfully developed.

Keywords: usnic acid; nanoparticle; nanocrystal; solubility

ID-243

Black Cumin Seed Oil Increased The Number of Cd4 Th And Decreased The Number of Cd4cd25 Treg Lymphocytes in Sd Rats Induced Dimethylbenzantracene

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7,12-DMBA-3,4-diol-1,2-epoxide (DMBA) are genotoxic, hematotoxic and immunosuppressive. DMBA metabolites have been shown to decrease T lymphocyte proliferation activity. DMBA metabolites are thought to decrease the activity of T-CD4 and CD4CD25 lymphocytes. Lymphocytes CD4Th and CD4CD25Treg play an important role in immunosurveilan against carcinogenesis. A study was conducted to determine the effect of black cumin seeds (MBJH) on the number of cytotoxic lymphocytes of CD4 and CD4CD25 Treg in SD rats induced by 7.12-DMBA-3,4-diol-1,2-epoxide (DMBA). In this study used 96 Sprague dawley rats. The test animals were divided into 8 groups, 12 rats / group. Group I (normal control), test animals were given standard beverages and foods. Group II, III and IV as the treatment group, test animals were given BCSO equivalent to 6.8, 68 and 136 mg / kgBW / day of timokuinon and induced DMBA. Group IV as positive control I test animals were given timokuinon dose 50 mg / kgBW / day) and group VI as control II (tamoxifen dose 60 mg / kgBW). Group VII as a group of sick, hwwan test induced DMBA 10x20mg / kgBW for 5 weeks. Group VIII as a solvent control group, test animals fed standard drinking and corn oil solutions provided as administered DMBA. In the third week All groups began to be induced with 20 mg / kgBW DMBA, 2x / week for five weeks. At week 27 was performed surgery and data retrieval. Calculation of CD4Th and CD4CD25 lymphocytes Treg of peripheral blood was done by flowcytometer Calculated difference of mean CD4 count and CD4CD25 Treg among all groups with one-way anova, then continued to post hoc test with LSD test. The results showed that administration of MBJH before and during induction in SDA rats induced by DMBA 10x20mg / kgbb for 5 weeks could increase the number of CD4Th and decrease the CD4CD25Treg. The BCSO equivalent dose 6.8 and 68 mg / kgBW / day of timokuinone has immunoprotective effect. It can be concluded that the administration of BCSO equivalent dose of 6.8 and 68 mg / kgbb / day of

timokuinon had immunoprotective effect due to 10x20mg / kgbb DMBA induction for 5 weeks in SD rats.
Keywords: immunoprotective; thymoquinone; CD4Thelper; CD4CD25 Treg; black cumin seed oil.

ID-246

Anticholesterol Activity of Kejibeling Extract (Strobilanthes Crispa Blume)

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Kejibeling is one of the medicinal plants used by many people, one of them as anticholesterol. This study aims to saw the anticholesterol activity of ethanol extract of kejibeling leaf (Strobilanthes crispa Blume). Animal experiments induced by high-fat foods and propylthiouracil (PTU) 0.26 mg/20 gram BW for 14 days. Parameters measured were total cholesterol levels were observed at days 7, 14, 21 and LDL were observed at day 21. The dose of ethanol extract of kejibeling leaf (Strobilanthes crispa Blume) used were 100 mg/kg BW, 200 mg/kg BW and 400 mg/kg BW. The result showed that the ethanol extract of kejibeling leaf (Strobilanthes crispa Blume) can decreased total cholesterol levels and no effect on LDL levels. It can be showed from two ways Anova with significant score for total cholesterol 0,000 (< 0,05) and for LDL 0,300 (> 0,300). The optimal dose of ethanol extract of kejibeling leaf (Strobilanthes crispa Blume) in lowering total cholesterol levels in this study is a dose of 400 mg/kg BW.

Keywords: Strobilanthes crispa Blume; anticholesterol; total cholesterol; LDL

ID-248

Synovial Membrane Mesenchymal Stem Cell (SMMSCs) for Osteoarthritis Diseases as Alternative Medicine

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Background: Mesenchymal Stem Cells (MSCs) are stem cells can be isolated from several tissues, including bone marrow, synovial membrane, blood, adipose tissue, and periosteum. The ability of MSCs proliferation and differentiation are good source for various diseases therapy. Research Goal: The purpose of this study is to determine the characterization, differentiation and proliferation of Sinovial Membrane Mesenchymal Stem Cell (SMMSCs) which isolated from osteoarthritis patients. Research Approach: The characterization of MSCs including CD90, CD44, CD105, CD73, CD11b, CD19, CD34, CD45 and HLA-DR using flow cytometry, and differentiation capacity to adipocyte, chondrocyte, osteocyte by staining. The cells proliferation of SMMSCs are measured using tryphan blue assay. Results: SMMSCs at P3 showed positive surface marker of CD90, CD44, CD105, CD73 and negative of CD11b, CD19, CD34, CD45, HLA-DR. SMMSCs of Passage 4,8 (P4,8) differentiated to adipocyte, chondrocyte, osteocyte. Proliferation doubling time (PDT) of SMMSCs increased in line with passage periods. Later passage resulted higher PDT.

Key words: Sinovial Membrane Mesenchymal Stem Cell (SMMSCs), osteoarthritis, synovial membrane.

ID-249

Charachterization of Pangas Bone Flour (*Pangasius Hypophthalmus*) as Calcium and Protein Source

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Fishbone is an undeliberate used fishing industry waste. Pangas (*Pangasius hypophthalmus*) village, located in Kampar, Riau Province, is the largest Pangas fish source in Sumatera. In 2013, this area had had 54 hectares Pangas fish pond that produce proximately ten tons of the fish per day. Usually, the fish can be processed into fillet, meatball, nugget, *abon* and *siomay*. This research aims to utilize the fishbone waste into a source of calcium and protein. The fishbone was prepared using protein hydrolysis method and then the organoleptic, pH, level of water, ash, protein and calcium was measured. The bone was softened using autoclave (121^{o}C, 1atm), and then boiled and extracted in NaOH 1.5 N at 60°C for 2 hours. It obtained specific smell yellowish white fishbone flour with the level of water, ash, protein and calcium of 14.53; 34; 5.43 and 24.09%, consecutively.

Keywords: Pangas fish; Pangasius hypophthalmus; flour; calcium; protein; waste

ID-250

Insertion of Artemisinic Aldehyde Δ11(13) Double Bond Reductase (Dbr2) into pCAMBIA 1303 harboring Gen Silencing Supressor (P19)

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Artemisinic aldehyde Δ11(13) double bond reductase (dbr2) was one of enzymes on the artemsinin biosynthesis that responsible to catalyze the formation of the dihydroartemisinic aldehide. DBR2 encoded gene was transformed to *Artemisia annua* L. plant for increasing of antimalarial artemisinin production. Transformation of extraneous gene into plant mediated by *Agrobacterium* can activate defense system of plant with non-activated extraneous gene that entered the plant called post transcriptional gene silencing (PTGS) mechanism. This mechanism caused transformant gene can not be translated by plant so that the expression of the enzyme was reduced. p19, an protein derived from tomato bushy stunt virus (TBSV) that coded by p19 gene can disturb the defense system of plant (silencing supressor). To increase the expression of dbr2 into *A. annua*, This gene was inserted into the p19 containing pCAMBIA1303 plasmid. The method used for insertion was cut and paste of synthetic dbr2 gene to pCAMBIA1303 plasmid which contain p19 gene. Dbr2 gene synthetic was restricted by *Bgl*II enzyme and *Spe*I enzyme then ligated into the p19 containing pCAMBIA1303 plasmid. Recombinant plasmid has been analysed with migration, PCR, restriction and sequencing. Based on allignment of sequence data, it could be concluded that the DBR2 gene was successfully inserted into p19 containing pCAMBIA1303 plasmid with *query coverage* 55% and identical 100%.

ID-251

Rapid Shoot Multiplication of Three Stevia (Stevia Rebaudiana (Bertoni)) Accession on Different Concentration of Plant Growth Regulator

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The development of stevia in Indonesia was constrained by propagation technology because of low seed germination rate. One of the alternative in stevia propagation was by shoot multiplication. The objective of this research was to obtain the best responses of stevia accession and Benzyl Adenine (BA) concentration in shoot multiplication of stevia. This research was arranged in two experiment with randomized complete block design in factorial pattern with two factor in each experiment. The first experiment, first factor was three accession of stevia, i.e. Bogor accession, Garut accession and Tawangmangu accession. The second factor was the use of cytokinins i.e. without cytokinins (control), Zeatin, Kinetin, TDZ, 2-IP and BA. The second experiment, second factor was concentration of Benzyl Adenine (BA) i.e. BA 0 mgL^{-1} (control), BA 0.15 mg L^{-1}, BA 0.5 mgL^{-1}, BA 1 mgL^{-1}, BA 1.13 mgL^{-1} and BA 1.5 mgL^{-1}. Each treatment replied five times. The result show that's Garut accession with BA cytokinin have best result in stevia shoot multiplication with 6 shoots. The best concentration of BA was obtain in Garut accession with BA 1 mgL^{-1} that produce 7.45 shoots. Best result in shoot length was obtain in Zeatin with Tawangmangu accession (8.2 cm). Best result in shoot length for the second experiment was obtain in BA 0 mgL^{-1} with 8.72 cm.

Keywords: stevia; sweetener; plant growth regulator; in vitro

ID-254

The Effect of Tapak Liman Leaf (Elephantopus Scaber Linn) on The Activity and Capacity of Phagocytosis Macrophage Cell and Percentage of Leukocyte Cells of Male Mice White

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Objective: Tapak Liman leaf (*Elephantopus scaber* Linn) has been reported to have cytotoxic effects on breast cancer (HeLa cells) and the potential to be development as anticancer and antitumor agen. This study aims was to determine the activity and capacity of macrophage phagocytosis, percentage of leukocyte cells and total leukocyte cells of male mice white which had been treated with the etahanol extract of Tapak Liman leaf.

Methods: Twenty white male mice were devide into four group. Group I (control) treated with Na CMC 0,5%, group II, III and IV were treated with ethanol extract of Tapak Liman leaf with dose 10, 30, and 100 mg/kgBB were given to the mice for seven consecutive days orally. Activity and capacity of phagocytosis were calculated on the 8th day after the number of cells blood leukocytes counted from tail and suspension Staphylococcus aureus injected intraperitoneally.

Result: the result showed that giving the etanol extract of Tapak Liman leaf can increase activity, capacity of machrophage phagocytosis and total leukocyte cells of male mice on analyzed with one way ANOVA and continued with Duncan test showed significant result ($p < 0,05$). Tapak liman leaf can also increase percentage of neutrophil cells and lymphosites and decrease percentage of monocytes of male mice.

Conclusion: ethanol extract of Tapak Liman leaf can increase activity and activity of macrophage phagocytosis and total leukocyte cells, neutrophil cells and lymphosites but decrease percentage of monocytes of male mice.

Keywords: Elephantopus scaber Linn; Tapak liman leaf; machropage; phagocytosis; total cell leukocytes; *Staphylococcus aureus*

ID-256

In-Vitro Hemolytic and Anti-Inflammatory Activity Test of Tinocrisposide and Freeze-Dried Aqueous Extract of Tinospora Crispa Stem on Human Red Blood Cell (Hrbc)

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In the previous study, tinocrisposide, a furanoditerpene glycoside has been isolated from the methanolic extract of *Tinospora crispa*. This research aimed to investigate the anti-inflammatory and hemolytic activity of isolated tinocrisposide and aqueous extract of *Tinospora crispa* stem. The Anti-inflammatory activity of tinocrisposide was investigated by membrane stabilization method using Human Red Blood Cell (HRBC), and the hemolytic activity was conducted by Human Red Blood Cell (HRBC) hemolytic assay. The anti-inflammatory experiment showed that tinocrisposide in interval concentration of 1000, 800, 600, 400, 200, 100 µg/mL gave a linear HRBC membrane stability activity with an optimum effect at 1000 µg/mL. Meanwhile, the freeze-dried aqueous extract of *Tinospora crispa* in interval concentration of 2000, 1000, 800, 600, 400, 200, 100 µg/mL exhibited a linear HRBC membrane stability activity with an optimum effect at 2000 µg/mL. From the hemolytic activity of tinocrisposide on HRBC in interval concentration of 1000, 800, 600, 400, 200, 100 µg/mL and freeze-dried aqueous extract of *Tinospora crispa* in interval concentration of 2000, 1000, 800, 600, 400, 200, 100 µg/mL are considered nonhemolytic with a hemolytic values of <10%. It can be concluded that tinocrisposide has an anti-inflammatory activity and no hemolytic activity on HRBC. So that tinocrisposide can be promoted and developed as an anti-inflammatory drug candidate.

Keywords: anti-inflammatory activity; hemolytic activity; human red blood cell; membrane stabilization; tinocrisposide; Tinospora crispa.

ID-257

Anti-Aging Activity of Fruit Flesh and Fruit Peel of Langsat Extracts (Lansium Domesticum Corr) In Vitro

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Introduction: *Lansium domesticum* or "Langsat" one of the species from Meliaceae family is a fruit that has many benefits. Several studies have reported on *L.domesticum* provide antioxidant activity that can be developed as an active ingredient of cosmetics. This study aims to determine the bioactivity of the fruit flesh and fruit peel of *L.domesticum* as cosmetic active ingredient.

Methods: the ethanolic extract (BLE and KLE) and ethyl acetate extract (BLEA and KLEA) of fruit flesh and fruit peel of *L.domesticum* were prepared by maceration method subsequently determined classes of compounds by thin layer chromatography (TLC) and analysed of total phenolic and flavonoid content with colorimetric method. The antioxidant capacity was measured using radical scavenging assay of 1,2-diphenyl-2-picrylhydrazyl (DPPH), while the inhibitory effect of skin degradation enzymes (anti-aging) was carried out using elastase and collagenase assay.

Result: Based on TLC result, it can be shown that fruit flesh and fruit peel of *L.domesticum* containing phenolic, flavonoids, terpenoids and steroids compounds. Total flavonoid content (% w/w EQ) obtained in BLE, BLEA, KLEA and KLEA were 0.55 ± 0.01, 0.76 ± 0.02, 4.76 ± 0.26 and 1.88 ± 0.02, respectively. While total phenolic content (% w/w EAG) obtained in BLE, BLEA, KLE and KLEA were respectively 3.69 ± 0.03, 6.40 ± 0.15, 2.65 ± 0.056), and 2.44 ± 0.047. Sequence of antioxidant activity measured using DPPH method was BLEA> KLE> BLE> KLEA. Anti-elastase activity of the extracts of the fruit flesh and fruit peel *L.domesticum* showed % remaining inhibitory activity of the enzyme elastase in a concentration of 50 µg /mL with result: BLEA (21.74%)> KLE (26.09%)> BLE (26 , 53%)> KLEA (31.81%).

Conclusion: Based on these results it can be concluded that the extract of the fruit flesh and fruit peel of L.domesticum has potential as a cosmetic active ingredient for anti-aging.

Keywords: *L. domesticum* extract; antioxidant and antiaging

ID-258

Induced Resistance of Banana Tissue Culture Against Fusarium Wilt and Bacterial Blood Disease

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The aim of this research was to evaluated the resistance of banana seedlings against Fusarium wilt and Bacterial Blood Disease, and to observed the physiological change after induction with culture filtrates of both pathogen *in-vitro.*

Banana seedlings were grown in inoculated soil (10^6 spores/ml *Fusarium oxysporum* f.sp *cubense* (Foc) and 10^8 cfu of *Ralstonia syzygii* subsp *celebensis*) and evaluated their resistance after the appearance of these typical symptoms. Total protein content was measured according to the method of Bradford (1976). Proteins were separated by using of native-PAGE and stained with AgNO3, whereas for isoenzyme esterase was stained with 1-Naphtylacetate.

The results showed that different levels of resistance among induced banana seedlings were observed. Variation in protein content, Protein-, as well as isoenzyme profiles were also detected. Induction of banana plantlets with 2.5% Foc filtrate resulted highest resistance to Foc and BDB (0% diseases incident). Low molecular weight of protein was only detected in induced banana sample. It was suggested that this specific protein has role in resistance mechanism of induced bananas

Keywords: *Fusarium oxysporum f,sp.cubense; Ralstonia syzygii subsp. Celebensis*; culture filtrate; protein

ID-260

Cytotoxic Test of Tinocrisposide and Freeze-Dried Aqueous Extract of Tinospora Crispa Against Human Leucocyte Cell Culture by In Vitro Method

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Tinocrisposide is a furanoditerpene glycoside ($C_{27}H_{36}O_{11}$) that has the bitter taste which isolated from the methanolic extract of *Tinospora crispa*. The aim of this study is to know the cytotoxic effect of tinocrisposide and the freeze-dried aqueous extract of *Tinospora crispa* against human leucocyte cells. Cytotoxic activity was performed using 3-(4,5- dimethyl thiazol- 2- il)-2,5- diphenyltetrazolium bromide (MTT assay) and quantified spectrophotometrically at the wavelength, λ 570 nm. The cytotoxic test of tinocrisposide was conducted in the interval concentrations of 1000, 800, 600, 400, 200, 100 µg/mL. Meanwhile, the freeze-dried aqueous extract of *Tinospora crispa* was assessed in the interval concentrations of 2000, 1600, 1000, 400, 100 µg/mL. There was a linear reciprocal correlation between the interval concentrations of tinocrisposide and freeze-dried aqueous *Tinospora crispa* stem with leucocyte viability percentage, with the coefficient correlation (r) = 0.9838 and 0.9346, respectively. Tinocrisposide's IC50 value was 750.49 µg/mL and the IC50 value of the freeze-dried aqueous extract was 4140 µg/mL. From the cytotoxic evaluation, it can be concluded that tinocrisposide and the freeze-dried aqueous extract of Tinospora crispa were not toxic to leukocyte cell culture.

Keywords: tinocrisposide; Tinospora crispa; cytotoxic; leukocyte cell culture; MTT assay.

ID-262

Analysis Of Essential Oil From Daucus Carota L. Seed And Its Cytotoxicity Assay Against A375 Cell Line

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Carrot (*Daucus carota* L.) is a plant that its parts were useful, there are seeds from carrot contains essential oils and can be used for medical purposes, such as anti-bacterial, anti-fungal, anti-inflammatory, and has a cytotoxic effect. This research aimed to identify the chemical constituents of carrot seed essential oil and its cytotoxic activity against human malignant melanoma (A375) cell lines. In this research, the essential oils were extracted by hydrodistillation method and analyzed by Gas Chromatography-Mass Spectrometry (GC-MS) method, and there were found 15 chemical compounds and the major components were carotol, geranyl acetate, nerol, terpineol, and asarone. Cytotoxic activity of carrot seeds oil at interval concentrations of 50; 25; 12.5; 6.25; and 3.13 µl/mL also has been conducted against A375 cell lines by an MTT (3-(4,5-dimethylthiazol-2-yl)-2,5 diphenyltetrazolium bromide) assay method. The cytotoxic activity test result indicated a linear relationship between concentration and cell viability percentage with a coefficient of correlation (R) 0.9961, it meant that increasing the concentration of carrot seed essential oil solution caused decreasing in cell viability at this concentration range. Carrot seed essential oil showed a potent cytotoxic activity against A375 cell lines, so these essential oils can be considered as anti-cancer agents.

Keywords: A375 cell lines; carrot seed essential oil; cytotoxic activity; *Daucus carota* L.; GC-MS analysis; MTT.

ID-264

Isolation of Agarose from Agar and its Use As A Substitute Of Growth Medium in Microbial Sensitivity Test to Antibiotic

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Agarose was isolated from *Gracilariagigas* agar. The isolated agar is obtained by dissolving agar in propylene glycol (1% w/v) by continuously stirring at 85°C. The addition of isopropanol at room temperature to solutions aims to precipitate pure agarose. The pure agarose is then separated by centrifuge and dried *in vacuo*. Randemen, total sulfate, gel-forming point, gel melting point and gel strength of isolated agarose were found 61.99%, 0.35%, 36^0C, 93^0C, and 1441 g / cm^2, respectively. In this study, isolated agarose was used as a substitute medium for antibiotic sensitivity test, and then compared with agar nutrient media. In this experiment were used two microbes, namely *Streptococcus mutans* and *Escheria coli* and three antibiotics, they were ceftazidime, cefotaxime, ampicillin in interval concentration of 10, 20, 30, 40, and 50 µg/disc). The research result showed that the inhibitory zone of the agarose nutrient media was more rounded (smaller standard deviation diameter), clearer, and wider than the agar nutrient media.

Diameter inhibition zone data of nutrient agarose and –nutrient agar were examined by two-way ANOVA and it found difference statistically. It can be concluded that agarose is better than agar when used as a growth medium in microbial sensitivity test to the antibiotic.

ID-266

Green Synthesis of Sulfur Nanoparticles Using Aqueous Extract of Garlic (Allium Sativum)

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Sulfur nanoparticles (SNPs) have been successfully prepared from sodium thiosulfate in the absence and in the presence of aqueous extract of garlic. The resulting of sufur nanoparticles were characterized by Fourier transforms infrared spectroscopy (FT-IR), X-ray diffraction (XRD), and scanning electron microscopy (SEM). The FT-IR results showed that the sulfur bonds have strong peak at 400-500 cm^{-1} which are typical absorption bond of spherical SNPs. The average size of nanoparticles were determined by XRD analysis and calculated using Debye-Scherrer formula, and the results showed that synthesized sulfur nanoparticles in the absence and in the presence of aqueous garlic extract were 70.908 and 55.613 nm respectively. The scanning electron microscopy (SEM) results showed that synthesized sulfur nanoparticles in the presence of aqueous garlic extract have clear and smoth spherical shapes. The activities of the sulfur nanoparticles (SNPs) were determined by Kirby-Bauer method, and the results showed that the sufur nanoparticles have no activities against *Candida albicans* at concentrations of 100, 200, 400, and 600 ppm.

Keywords: Sulfur nanoparticles; *Allium sativum*; sodium thiosulfate; *Candida albicans*

ID-267

Transcription factor of *Ganoderma boninense*

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Ganoderma boninense is a dominant phytopathogenic basidiomycete fungus causing basal stem rot (BSR) disease of oil palm mainly in Malaysia, Indonesia and Papua New Guinea. Transcription factor (TF) is a protein that binds to promoter of genes to regulate their expression, including those needed to confer full virulence in the host cells. This study aimed to identify TFs in *G. boninense* which might play as virulence factor of the phytopathogen. The *G. boninense* genome was downloaded from the gene bank under the accession number PJEW00000000. Twenty specific fungal transcription factor domains were downloaded from the FTDB: Fungal Transcription Factor Database. These domains were blasted against the genome sequence of fungus using the HMMER version V3.1b2 to identify putative TFs. In total, 399 TFs were identified in the species. These TFs were classified into 26 protein families i.e. APSES (6), AT_rich (12), bHLH (13), Bromodomain (5), bZIP (13), C2H2 (27), CCAAT (8), CCR4 (3), Centromere (2), HMG (9), Homeodomain (7), HTH (1), HTH_Arac (19), Jumonji (10), Lambda (23), MIZ (1), Myb (23), NF-X1 (2), Nucleic (32), PARP (94), Rad18 (3), SART1 (3), SGT1 (2), Winged (18), YL1 (1), Zn2Cys6 (62). A transcriptomic data of this fungus infecting one month old oil palm ramets in root tissues at 7 days post inoculation (dpi) through RNA-sequencing analysis was used to assess the possible role of each TF during infection. Top three highest up-regulated TF(s) were each detected at 3.28 (*GbPARP-9*), 3.18 (*GbPARP-55*), and 2.12 (*GbPARP-11*) times more abundant at 7 dpi compared to fungal transcripts in potato broth medium control. It indicated their important roles in regulating other functional genes that needed to obtain successful infection in oil palm root tissues. In the near future, this result will be confirmed with RT-qPCR analysis that will assess more precisely the transcript abundance levels of each important TF encoding genes.

Keywords: basal stem rot, transcription factor, *Ganoderma boninense*, oil palm.

ID-268

The Effect of Msg As Fertilizer to The Plant Growth of Brassica Parakinensis and The Msg Left in The Plant Tissue

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In practice, MSG is not only used as a flavoring dish, but also as a fertilizer. This research is intended to know how the effect of MSG as fertilizer on: (1) the growth of *Brassica parakinensis*; and (2) increased levels of MSG in plant tissues. The research was conducted in greenhouse using experimental method. The design was a complete randomized design of one factor and three treatments, namely : (1) control; (2) MSG replaced Nitrogen fertilizer; and (3) only MSG. MSG is observed on the leaves because generally part of the plants consumed is the leaves. MSG increased plant growth and yield as well as Urea, TSP and KCl. There was a tendency of MSG content in leaves given MSG higher than those without MSG.

Keywords: MSG; fertilizer; growth; MSG content on leaves.

ID-270

Anti-infertility Effects Test of Ethanol Extract of Date Palm Fruit (*Phoenix dactylifera* l.) in Female Mice (*Mus musculus*) Compared With Propolis

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The date palm (*Phoenix dactylifera L*) is one of the plants empirically used to increase fertility. The aim of this study was to determine anti-infertility effect of ethanol extract of date palm fruit in khalal stage in female mice compared with propolis. 5 groups were assigned to 1 control and 4 experimental groups. Experimental group treated by oral administration of 100, 200 and 400 mg/kgBW of khalal date fruit extract and 200 mg/kgBW of propolis for 5, 10 and 15 days. Control groups received no extract. After 5, 10 and 15 days the mice were deeply anesthetized with anesthetic ether and sacrificed. Histological changes in ovary and uterine were measured. The data was analyzed by using two way ANOVA and Duncan test.

Keyword: Propolis, date palm fruit,fertility, histology, Follicles, ovary, uterine

ID-271

Profilling of Shrimp Shell Hydrolysis Product by Chitinase from *Bacillus licheniformis* B2

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The application of chitin in the area of food and biomedicine is limited due to its insolubility in both aqueous solvents. However, its hydrolysis product, N-acetyl chitooligosaccharides,is water- and acid- soluble and has equal function as the polymer form. *Bacillus licheniformis* B2 isolated in previous study from Ijen Crater, Banyuwangi, East Java, appeared to be potential as chitin degrader bacteria. The aim of this study was to characterize the products of shrimp shell chitin degradation by chitinase from *B. licheniformis* B2. The hydrolysis products were analyzed using High Performance Liquid Chromatography (HPLC) with Zorbax Carbohydrate column and acetonitrile:water (70:30) as the isocratic mobile phase. Two major signals were detected at retention time of ±5.9 and ±7.8 minute, respectively, and assumed to come from N-acetyl Glucosamine ($C_8H_{15}NO_6$) and its dimer, N-acetyl chitooligosaccharides ($C_{16}H_{28}N_2O_{11}$), respectively. Additionaly, the highest degradation rate was observed within 30 minutes at 50 mg/mL substrate concentration. This data may contribute to the production of N-acetyl Glucosamine ($C_8H_{15}NO_6$) and dimer N-acetyl chitooligosaccharides ($C_{16}H_{28}N_2O_{11}$) from shrimp shell especially for nutraceticals.

Keywords: Bacillus licheniformis B2, chitin, chitinase, N-acetyl chitooligosaccharide

ID-273

Preliminary Study of Antibiotic Potency of Jamaican Cherry Leaf Extract (*Muntingia calabura*) as Inhibitor of *Pseudomonas aeruginosa* Bacteria

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Infection will be a threat to someone who has an open wound that could be contaminated with bacteria. *Pseudomonas aeruginosa* is a species determined as pathogenic microorganisms in the wound and could infect if the host lack of defense functions. The application of antibiotics are needed if the wound are infected with microorganisms such as *Pseudomonas aeruginosa*. One alternative that can be used is a natural material derived from Jamaican Cherry leaf (*Muntingia calabura*). The purpose of this study is to determine the effect of Jamaican Cherry leaf extract *(Muntingia calabura*) on the inhibition of bacteria Pseudomonas aeruginosa as one of the bacteria causing infection in open wounds. This research was conducted by using diffusion method (cup-plate technique) with different concentration of extract as treatment. The concentration of extract used was 0%, 1%, 2%, 3% and 4%. The result of the research showed that there was an effect of different concentration of Jamaican Cherry leaf extract which was used on *Pseudomonas aeruginosa* bacteria, which stated with F value of 1542 > from F statistic (0.01) with a significant of α level = 1% of 4.89. Thus the measurement results on each treatment differ significantly. The order of the inhibition zone from the smallest to the largest are 10,51 mm, 13,25 mm, 16,41 and 19,24 mm. From this study it can be concluded that the leaves of Jamaican Cherry (*Muntingia calabura*) have antibacterial effect against *Pseudomonas aeruginosa* bacteria.

Keywords: Antibiotic Potency, Leaf Extract, Jamaican Cherry, *Pseudomonas aeruginosa*

ID-274

The Activity of *Elephantopus Scaber* L. Leaves Ethanol Extract on The Active Cutaneous Anaphylaxis Reaction of White Male Mice

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Research on the active cutaneous anaphylaxis effect of *Elephantopus scaber* L. leaves ethanol extracts has been done. Active cutaneous anaphylaxis effect was determined by monitoring the prolong occurrence time, diameter, and intensity of blue color on mice Active cutaneous anaphylaxis is a rapid and local hypersensitivity reaction in the skin when body forms antibodies on their own. This reaction is characterized by a sudden response that occurs within minutes after exposure to a challenging dose of antigen, thus releasing various mediators present in cells such as histamine, bradykinin, arachidonic acid, and prostaglandins. This cause an increase in capillary permeability, vasodilatation, and local inflammation. The pharmacological purpose of anaphylaxis treatment is to inhibit swelling caused by mediators and vasodilatation in blood vessels. The *Elephantopus scaber* L. is a native Indonesia plant that has potential as an antianaphylaxis agent. The research was conduct in various dose; 10 mg/kgBW, 30 mg/kgBW, 100 mg/kgBW and using chlorpheniramine maleate as standard comparison. Ethanol extract of *Elephantopus scaber* L. leaves is orally administrated to the mice that already sensitized by subcutaneous injection of egg white solution 10% w/v. Blue Evan's solution 0.25% was given intravenously as a color indicator. Research result shows that ethanol extract of *Elephantopus scaber* L. leaves can reduce active cutaneous anaphylaxis reaction in a higher dose. 100 mg/kgBW dose shows the best effect among another dose. ANOVA test results in a significance value of $p<0.05$ show that there are different effects occurred in the research depends on *Elephantopus scaber* L. leaves ethanol extracts doses variation and time. Post-hoc test of Duncan indicated significant differences for each dose in the research.

Keywords: Anaphylaxis cutaneous activel; *Elephantopus scaber* L.; ethanhol extract; mice

ID-275

Blood cholesterol of Chicken Fed Ration Containing Fermented Pineapple Peel and Medicinal Weeds

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Cholesterol levels in the blood become a benchmark of health. Therefore this study aimed to determine the cholesterol level in the broiler chicken blood fed ration containing fermented pineapple peel and medicinal weed. Two hundred – 2 days old male chicken were used in this study and kept for 42 days. It was designed into completely randomized design with 5 treatments and 4 replications. The treatments were T0 = 0% fermented pineapple peel (FPP) and 0 % medicinal weed (MW). T1 = 0% FPP and 2% MW. T2 = 7.5% FPP and 2% MW. T3 = 15% FPP and 2% MW. T4 = 22.5% FPP and 2% MW. Medicinal weeds were a combination of pearl grass : sidaguri : bandotan : patikan kebo (1 : 2 : 2 : 2) respectively. Parameters were feed consumption, body weight, and blood cholesterol. Data were analyzed by ANOVA and Duncan's Multiple Range Test. Results of this study showed that using 22.5% FPP and 2% MW significantly ($P<0.05$) decreased feed consumption and body weight but did not significantly ($P>0.05$) affect blood cholesterol. This indicates that combination fermented pineapple peel and medicinal weed could offer to broiler chicken to reduce blood cholesterol and body weight.

Keywords: cholesterol; fermented pineapple peel; medicinal weed

ID-276

Formulation and Effectivity Test of Deodorant from Activated Charcoal of Palm Shell (*Elaeis Guineensis* Jacg) as Excessive Sweat Adsorbent on Body

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Activated charcoal was proven to be able to remove dirt on face and adsorb toxins and excessive sweat on the body. It is caused by oxygen content in Carbon. Effectivity of activated charcoal of palm shell (Elaeis guineensis Jacg) is better than the activated charcoal is used as beauty products. One of them are deodorant either in powder and roll on from, that used to adsorb excessive sweats in the body that interfere daily activity and lower confidence. The aim of this study was to know the physically stable deodorant preparations during storage and to obtain the preparations. Activated charcoal used by teh formulation od deodorant powder and roll on each with a concentration of 15 %. The evaluation of the physical properties of deodorant include: organoleptic test, homogeneity, pH measurement, viscosity, flow properties, drying time, water content, flow time, density, cucling test, hedonic test, irritation test and effectivity test of sweat adsorption. Descriptively produced data stated that deodorant powder is more physically stable that deodorant roll on which has separated during storage. For the effectivity of sweat adsorption, deodorant powder is more effective than deodorant roll on.

Keyword : deodorant, activated charcoal, palm shell, sweat

ID-277

Antimicrobial Activity Test Of Tinocrisposide On Rifampicin Resistant Mycobacterium Tuberculosis By Lowenstein Jensen Method

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In previous study tinocrisposide ($C_{27}H_{36}O_{11}$), a furanoditerpene glycoside has been isolated from *Tinospora crispa*. These research aims were to investigate antimicrobial activity of tinocrisposide on Rifampicin Resistant Mycobacterium tuberculosis (RRMT) and to determine the Minimum Inhibitory Concentration (MIC) of the compound by Lowenstein Jensen method. The result showed that tinocrisposide has a high antimicrobial activity against RRMT at a given concentration interval. It can be concluded that tinocrisposide can be promoted and developed as an antituberculosis drug candidate.

Keywords: antituberculosis, *Mycobacterium tuberculosis*, tinocrisposide, *Tinospora crispa*

ID-278

Biological Activity of Microbial Symbionts of Marine Invertebrates

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Many marine invertebrates, such as sponges, soft corals, tunicates, nudibranches harbour dense and diverse microbial communities of considerable ecological and biotechnological importance. There has been an increased interest on the potential of microbial symbionts (bacteria and fungi) of marine invertebrates to be applied for medical and industrial sectors.

In order to explore the potential of these microbial symbionts, different types of marine invertebrates were collected from geographically different locations of Indonesian water. Bacterial and fungal symbionts were successfully isolated and screened for their potential based on biological assays against clinically important pathogens including Multi Drug Resistant (MDR) strains.

The present study highlighted the biological acitivities of bacterial and fungal symbionts of marine invertebrates and future potential of these symbionts.

Key words: Biological activity, bacterial and fungal symbionts, marine invertebrates

ID-279

Hybrid Coating Material from Natural Product Base of Polypropylene Itaconate and Silicate

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In this paper, fabrication of functional coating materials based on PPIA modified with silicate will be presented. The synthesis of unsaturated PPIA was done by condensation reaction of itaconic acid and propanediols. The fabrication of coating was done using UV light and thermal on the glass plate. Thermal stability, surface morphology, and UV transmitance have been investigated. The color of the surface coating turned from the yellowish transparent into clear surface after incorporation of TEOS/silicate . The thermal stability of the PPIA coating after insertion of silicate showed no difference with origin PPIA. The content of 1 until 5% silicate in the PPIA affected on the UV transmitance of coating. This method offer the fabrication of coating material of polyester in which the transparent form of coating is needed.

Keywords: coating , PPIA, silicate, polyester

ID-280

Gallic Acid as Natural Bioactive Anti-Autism Compound from Tea (*Camelia sinensis*) based on LCMS (liquid chromatography-mass spectrometry) and Virtual Screening Analysis

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Autism is a cognitive disorder caused by neuropsychiatric disorders. Tea is a plant that is often used as a medicinal plant because of the antioxidant content of phenol and its derivatives are quite high. a number of phenol derivatives in plants have the potential to reduce neuropsychiatric symptoms. This study aims to reveal the bioactive potential of natural compounds from tea based on LCMS (liquid chromatography-mass spectrometry) as anti-autism compounds through virtual docking analysis. Gallic acid is a bioactive compound in tea that predicted to play a role in neuropsychiatric activity. Bioinformatics software used in this study is a compound database Pubchem, webserver protein SwissTarget Prediction, database protein UniProt dan Protein Data Bank, softwaer docking PyRx 0,8, software visualisasi hasil docking PyMol dan discovery Studio. Based on the analysis of virtual screening of target proteins, it is known that gallic acid binds carbonic anhydrase 1 (CA1) protein with an affinity binding of -5.9 kcal / mol. Docking results show that gallic acid has the same potential as some other CA1 inhibitors such as acetozolamide, ethinamate, and zonisamide. Based on Lipinski parameters, gallic acid has the potential as an anti-autism drug by decreasing neuropsychiatric disorders.

Keywords: autisms, carbonic anhydrase 1, tea, virtual screening

ID-281

The Effect Of Turmeric Enriched Feed In Preventing Liver Structure Alteration Due To *Aeromonas Hydrophila* Infection In *Pangasius Hypopthalmus*

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Turmeric is one of the most widely available herbs in Indonesia, has anti-inflammatory effects and potential for curing the macrobial infection deseases in fish. Histopathological study of liver of *Pangasius hypopthalmus* that were fed with turmeric extract enriched feed and were infected with *A. hydrophila* has been conducted on August to December 2017. The fish was fed with turmeric extract enriched pellets 0.3 g/kg (P1); 0.5 g/kg (P2) and 0.7 g/kg (P3) for 30 days. Then the fish was infected with *A. hydrophyla* (0.1 ml of 10^9 cells/ml). For negative control (Pn), the fish was not infected with *A. hydrophyla* nor treated with turmeric extract, while the positive control (Pn) was infected with *A. hydrophyla* with no turmeric extract treatment. Liver organ was processed for histological study (formalin fixed, alcohol series processed and HE stained). Result shown that the liver structure of *A. hydrophyla* infected fishes (Pn) showing abnormality symptoms, such as hemorrhages, necrotic cells, hypertrophy of the epithelial cells of the renal tubules, blood congestion and cell degeneration. The liver structure of turmeric extract treated fish (0.7 g/kg) on the other hands shown less abnormality than that of the negative control fish. It can be concluded that the turmeric extract enriched feed is able to increase the immune system in fish toward *A. hydrophyla* infection.

Key words: liver, *Pangasius hypopthalmus, Aeromonas hydrophila,* turmeric

ID-282

The Induced resistant mechanism by selected rhizobacteria in chili against *Ralstonia syzygii* subsp. *indonesiensis* (Safni *et al.* 2014)

Trimurti Habazar*

Bacterial wilt disease (*Ralstonia syzygii* subsp. *indonesiensis*) cause high yield loss until 90 % on chili production area. It is difficult to control this disease, because the pathogen has many host plants from different families. A number of biocontrol bacteria, also known as plant growth promoting rhizobacteria (PGPR), protect plants from soil-borne pathogens by antagonistic mechanisms. Such bacteria colonizing on the roots can also induce systemic resistance in aerial plant parts. Previous research, we have found 13 indigenous rhizhobacterial strains as biological agent to control this disease. The majority of PGPR confer plant immunity against a wide range of diseases by activating plant defenses that reduce a plant's susceptibility to pathogen attack. The aim of this research is to determine the mechanism of induced resistance of rhizobacterial inoculated chili plants against *R. syzygii* subsp. *indonesiensis* by measuring accumulate jasmonic acid (JA), salicylic acid (SA), and ethylene (ET) The results showed that the application of PGPR could enhanced the accumulation of jasmonic acid and ethylene in the roots and leaves of chili plants compare than control, whereas the accumulation of salicylic acid was higher in the roots. Accumulation of jasmonic acid was higher in Bacillus sp. RZ.2.2.AG2 inoculated chili plant, whereas accumulation of ethylene was higher in *Pseudomonas hibiscicola* RZ.1.1.AG4 inoculated chili plant.

Keywords: chili; ethylene; jasmonic acid; *Ralstonia syzygii* subsp. *indonesiensis*; rhizobacteria; salicylic acid

ID-283

Effect of Steroid Hormone Supplementation on Development of Endometrial Cells in Vitro After Collagenase Treatment

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Endometrium is part of female reproductive organ which play an important role in maintain reproductive cycles and pregnancy. Endometrial damage causes failure in reproductive system. Treatment of reproductive disturbance required more endometrial cells. Steam cells of endometrial has been developed to fulfill huge number of endometrial cells. Furthermore, it is well known that regulation occurs in the endometrium in vivo initiated by the steroid hormone such as estradiol (E2) and progesterone (P4). It is therefore, this research was focused on study endometrial cell culture techniques in vitro under influence of Estradiol, progesterone and their combination on proliferation rate of ewe endometrial cells. Endometrium was chopped and incubated with collagenase enzyme for 3 hours. Isolated cells were then cultured for 5 hours. Cell concentration and viability were calculated after incubation. 1 x 106/ml best developed cells were then continued culture in the DMEM containing 10% NBCS and supplemented with different steroid and their combination such as (a) 100 pg/ml E2, (b) 100 ng/ml P4, (c) combination E2: P4 (100 pg/ml : 10 ng/ml), and (d) combination E2:P4 (10 pg/ml : 100 ng/ml), respectively. After 9 days culture period, cells were then harvested by trypsinization. Concentration and cell viability were analyzed using ANOVA, followed by DMRT test, endometrial cell culture was analyzed descriptively-qualitatively. The results showed that endometrial proliferation rate was higher in the treatment with higher estradiol concentration either of 100 pg/ml E2 (2,49 fold),or in combination E2;P4 (100 pg/ml : 10 ng/ml) (2,39 fold). While in the 100 ng/ml P4 treatment showed lower development (1,83 fold) and in combination E2:P4 (10 pg/ml : 100 ng/ml) 1,97 fold. This result indicated that Estradiol was more required to support better development than progesterone. However, no significant difference in the viability cell. The range of viability cells 84,49 – 85,38. It is concluded that Estradiol can support better development of endometrial cells in vitro than progesterone.

Keywords: Endometrial, cells, steroid, in vitro, proliferation

ID-284

Isolation and Characterization of Endophytic Fungi from Medicinal Plant, Buah Makassar (Makassar Fruit : *Brucea javanica*)

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Brucea javanica (L.) Merr. is a member of Simaroubaceae which call as Makassar Fruit and having medicinal potency. Endophytic fungi The new prospective area on agriculture and forestry are the use of microorganisms to promote plant growth and to protect the plant hosts from pests and diseases. One group of the microorganisms is endophytic fungi. The research aims to isolate and to identified of fungal endophyte of clones cocoa resistent VSD M.05 and clones cocoa susceptible VSD M.01. A total of 10 isolates of fungal endophyte were isolated from clones cocoa resistent VSD M.05. The isolates belonged to 6 genera namely: *Curvularia* sp., *Fusarium* sp., *Geotrichum* sp., *Aspergillus* sp., *Gliocladium* sp., *Colletotrichum* sp., and 4 isolates that have not been identified as not showing conidia on media of PDA media.

Keywords: Endophytic, fungi, resistant VSD M.05, susceptible VSD M.01

ID-286

Effect of Wood Vinegar on Growth and Yield of Ocra (*Abelmoschusesculantus* (L.) Moench))

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Ocra (*Abelmoschusesculatus* (L.)Moench) is a vegetable rich in fiber, minerals, and vitamins, so it is often recommended by nutritionists to control cholesterol, diabetes and weight loss programs. This study utilizes agricultural waste of wood vinegar (liquid smoke). Wood vinegar is normally utilized as pesticides, plant growth regulator, as medicine (pharmaceutical industry), and cosmetics. The research was conducted in Palembang South Sumatera from August 2017 to October 2017. The research design was Randomized Block Design, with 5 treatments and five replications as follows: P0 = without wood vinegar (Control); P1 = 10 ml of wood vinegar + 990 ml of water; P2 = 20 ml of wood vinegar + 980 ml of water; P3 = 30 ml of wood vinegar + 970 ml of water; P4 = 40 ml of wood vinegar + 960 ml of water. Wood vinegar can help enhance, and multiply the leaves, the number of branches, the number of fruits, the weight of fruit per plant, the weight of the fruit per plot so that it can be said to be effective as a growth stimulate o the okra plant. The greater the concentration given, the growth is increasing.

Keywords: ocra, wood vinegar

ID-287

Influence of Soybean Milk Addition and Homogensization Time on Physical Chemical and Sensorialproperties of Saga Beanmilk (*Adenanthera Pavonina* L.)

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Utilization of saga bean (*Adenantherapavonina*, L) as a source of food has not been done. One example of processed products of saga bean is saga bean milk. The high-fat saga bean milk has a low emulsion system stability and it has stark beany flavour. The process of homogenization and the addition of soy milk will improve saga bean milk formulation and will be accepted by the panelists. This study used a complete randomized design with two factors: Factor A (level of substitution of saga bean milk) with a1 = 100%, a2 = 80%, a3 = 75%, and a4 = 70% and Factor B (homogenization time) b1 = 0 minutes, b2 = 10 minutes, b3 = 20 minutes, and b4 = 30 minutes. The analyzes were calculation of fat globule size, organoleptic test, pH test and total solids, fatty acid profile was done to see the nutritional value. The best results were obtained in milk with saga bean milk substitution level of 70% and homogenization time was 30 minutes at 8000 rpm. The milk produces a percentage of the product's receptivity to color, aroma, taste, and appearance (stability) at 80%, 60%, 80%, and 73% respectively, and has a pH value of 7.0; total solids is 14%, and has a (average) size of fat globular diameter of 10.00µm. The typical fatty acids present in saga bean milk are long chain fatty acids, among others arachidonic acid, Cis-11-Eiocosenoic acid, Cis11-14 Eicosedienoic acid, behemic acid, lignoseric acid and nervonic acids. This type of long chain fatty acid has the potential as an anti-cholesterol substance

ID-288

Antibacterial and Antioxidant Activities of Green Alga *Halimeda* Spp. from Seribu Island, Indonesia

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This study aims to determine the antibacterial and antioxidant activities of green alga *Halimedagracilis* and *Halimedamacroloba*, to determine the bioactive compounds and the active fraction for antibacterial activity. The study was conducted with several stages, including sample collecting and preparation, extraction of bioactive compounds, antibacterial and antioxidants activity assay, phytochemicals assay, and fractionation. The green seaweeds used in this study were identified as*H. gracilis* and *H. macroloba*. The differences of handling from sampling location including storage in chilling temperature and liquid nitrogen was applied to observe the biological activity of *Halimeda*extracts as a response. Extraction was done using maceration with methanol and concentrated by rotary evaporator. The methanol extractsof *H. gracilis* and *H. macroloba*thenwere tested against *Staphylococcus aureus* and *Escherichia coli*. Methanol extract of *H. gracilis*was active against both bacteria tested with inhibition zones respectively 10.00±0.00 mm and 6.00± 0.00 mm for *S. aureus* and *E. coli*, while for those of *H. macroloba* methanol extract respectively were 5.50±1.71 mm and 3.50±1.71 mm. Phytochemical test showed that the methanol extract of *H. gracilis* contains phenols and steroids while *H. macroloba* contains saponin and phenol. Fraction B and C of *H. gracilis* intact and cut, active inhibit test bacteria at concentrations of 0.2 mg. Testing antioxidant methanol extracts of *H. gracilis* intact show IC_{50} value at 290.49 ppm.

Keywords: antibacterial, antioxidant, extract*, H. gracilis*, *H. macroloba*

ID-289

Bionanocomposite And Its Potential For Medical Application: A Review

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Aim of this paper is to review bionanocomosite and its application for medical field. It consists of biodegradable matrix and/or reinforcements. This material has a relatively low cost, is widely available, easy to handle, and totally compostable without toxic residues. As an environmental friendly polymeric material, bionanocomposite has a potential substance for medical application. However, this material has a weakness, such as high moisture absorption, low mechanical and thermal properties. Many studies report efforts carried out to decrease these weaknesses. For example addition of hydrophobic nano-scaled materials results in a bionanocomposite with better properties. Bionanocomposites based on poly(lactic acid) have been effectively applied in the food packaging industry, because of its high mechanical properties, transparent nature, and biocompatibility. Furthermore, bacterial cellulose reinforced bionanocomposite has been successfully applied in the medical sector such as for wound healing and skin tissue repair with a high clinical performance. Even designing ideal biomedical devices as artificial skin and artificial blood vessels from BC bionanocomposite was recently reported. Also, bionanocomposite has replaced a synthetic polymer as based material in medical components.

Keywords: bionanocomposite, *bacterial cellulose*, pure cellulose, medical application

ID-290

Antioxidant and Cytotoxic Activities Methanol Extract and Pure Compound From Leaf Akar Kaik Kaik (*Uncaria Cordata* (Lour.) Merr).

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The purpose of this research is to determine the antioxidant value and cytotoxic activity of methanol extract of leaf akar kaik kaik and also to isolate the secondary metabolite compounds in the methanol extract of akar kaik kaik (*Uncaria cordata* (Lour.) Merr). This research as begun with the multilevel maceration method . Extracts were then tested for their antioxidant activity using DPPH method with the variation concentration of sample 100 µg / mL, 50 µg / mL, 25 µg / mL, 12,5 µg / ml, 6,25 µg / mL and 3,125 µg / mL. Cytotoxic activity using BSLT method with the variation concentration of 100 µg / ml ,, 10 µg / ml, and 1 µg / ml. Beside the antioxidant and cytotoxic activity test, isolated secondary of metabolite compounds was also done and subsequently the isolated compounds were characterized using TLC, UV-Vis and IR The result of antioxidant activity test showed that IC_{50} value of methanol extract of akar kaik kaik was 6,778 µg / ml. The result of testing of cytotoxic activity on *Artemia salina* Leach larvae was obtained LC_{50} 7.83 µg / mL , it is indicated that the methanol extract of akar kaik kaik has high level of antioxidant and cytotoxic activity. The compound has been isolated from methanol extract (Uc F1) in the form of amorphous, green and chemical examination of compounds using Liebermann-Burchard chemical reagents, giving a mud color, a supposedly including terpenoids. The UV spectrum results showed that maximum absorbance at wavelength of 202.00 nm and from IR spectral data shows the presence of aliphatic C-H groups, -C = O, -CH2, and -CH. The results of cytotoxic activity test of pure UcF1 compound showed strong cytotoxic activity with LC_{50} value 69,18µg / mL and not active as antioxidant.

Keywords: Antioxidant, Cytotoxic, *Uncaria cordata*

ID-291

The Addition of Gelatin in Seaweed (*Eucheuma cottonii*) Jelly Candy with Cinnamon (*Cinnamomum burma*) Flavor

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Seaweed *Euchema cottonii* as a source of carrageenan has been widely used for food industries. This research will develop seaweed jelly candy processing with cinnamon flavor and addition of hydrocolloid material (gelatin) to improve the product texture. This study aims to obtain the best gelatin concentration in the manufacture of cinnamon jelly candy. The experimental design used in this study was Randomized Block Design consisting of one factor, namely gelatin concentration. The factor of gelatin concentration (a) consists of 5 levels ie a1 = 0%, a2 = 2%, a3 = 4%, a4 = 6% and a5 = 8%. Repetition is done 3 times. Based on this research, it is found that the addition of gelatin by 6% is the best. The resulting showed an average color preferences of 3,682 (regular - like); aroma preferences of 3,205 (normal - like); taste preference of 3,386 (usual - like); texture preference of 3,523 (usual - like); and water content of 13.616%. Dietary fiber content of 5.27% and negative or undetectable metal content (Pb, Cu, Sn and Hg). Based on the chemical test, the cinnamon jelly candy meets SNI 3547.2-2008.

Keywords: *Eucheuma cottonii*, candy jelly, gelatin, cinnamon

ID-292

Compatibility Study between Amikacin, Aminophylline and Cefoperazone-sulbactam with Parenteral Nutrition through Y-site Administration on Neonates

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Malnutrition was susceptible to patient at Neonates Intensive Care Unit (NICU), such as neonates birth premature who experienced intestinal failure. In addition, neonates had significant risk to got sepsis and respiratory failure syndrome due to the immune system and function of the respiratory organs was not optimal. So this patient required drug therapy such as amikacin, aminophyline and cefoperazone-sulbactam. Parenteral nutrition could be administrated with drug injection. Administration can be done through infus y site. However, administration should consider physic compatibility studies as a determinant of the quality of parenteral preparations that impact on the success of patient therapy in the NICU. The test was performed by simulating the mixing between each injection of amikacin, aminophylline and cefoperazone-sulbactam with NP by administering Y-site at a ratio of 1: 1, all mixing was done under aseptic conditions. Each drugs injection diluted with diluent. And there are 2 diluent are used to dilute it, namely 0.9% sodium clhoride dilution and 5% dextrose dilution . While parenteral nutrition which would be tested was 2 formulations. They are NP 2-in-1 and NP 3-in-1 (with fat formulation). PN 2-in-1 mixtured was evaluated with precipitation test while NP 3-in-1 mixtured was evaluated with precipitation test and emulsion stability test. The test was performed immediately after mixing (T0), 1 hour after mixing (T1) and 4 hours after mixing (T4). The results showed that amikacin, aminophylline and cefoperazone-sulbactam that administered with PN 2-in-1 and PN 3-in-1 through Y-site administration were absence of particulates, sediment, turbidity, pH change, phase separation and droplet with diameter lipid >5 µm when infusion was given within 4 hours. Therefore, concurrent administration may be performed between each injection of amikacin, aminophylline and cefoperazone-sulbactam with NP 2-in-1 and NP 3-in-1 through Y-site administration.

Keyword : Physical compatibility, amikasin, aminofilin, cefoperazone-sulbaktam NP 2-in-1, NP 3-in-1, Y-site

ID-293

Characterization of Starch from Modified Purple Sweet Potato by Gelatination and Propilation with Microscope Polarization

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An experimen has been done on an isolation of starch made from purple sweet potato. The purple sweet potato was peeled, shredded and squeezed and the outcome was let in room temperature for several hours. To get the starch, by means of fresh pour process was made until the starch water became clear. The achieved starch then be dried and the obtained rendemen was 8.44%. The next process was modification prosess. First modification was gelatination, 10% b/v suspense of starch was heated until it reached 70o C, the suspense was drained by the oven in 40o C, milled, and filtered with the sieve. Second modification was propilation, with added propionate acid 15% from the weight of starch. The addition of propionate acid done in controlled of pH 8-8.4 by added NaOH 0.5 N. Time of reaction was 90 minutes. The last modification process made was gelatination of propilation starch. The examination under X-rays result showed more amorphous patterns in the modified starch in compared to the natural starch. Measurement of specific gravity of each starch showed decrease in number between natural starch, propilation starch, gelatination starch, and propilation starch that was gelatinize. The experiment resulted in 4 types of starches, which were natural starch, propilation starch, gelation starch, and propilation starch that was gelatinized. The 4 types of starches then characterized using microscope polarization. From the photo result using microscope polarization, each starches reflected polarization light in yellow and blue but showed different pictures. However, the original starches was still visible in modified starches, which means the modification was still imperfect because the reaction process was not optimal yet.

Keywords: Purple sweet potato, modified starch, gelatination, propilation, microscope polarization

ID-295

Intellectual Property Rights (IPR): in the framework of the protection of natural resources and creativity have an impact on the economy

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Most developed countries are not rich in natural resources, but because of their human resource capacity in managing their limitations. In a time of great need for speed, precision, and comfort today, can we imagine living without the support of various technological products that are the product of human creation. It has been the imagination of the world's creators that has enabled humanity to advance to taday's levels of technological progress. Something included technology that is the result of creativity and is the result of solving the problems included: 1) make life easier, comfortable, economical, 2) increase knowledge about the environment/world. 3) create an entertaining effect, and 4) improve the safety factor. IPR is a power tool for economic development that is not yet being used to optimal effect in all countries, particularly in the developing world. Indonesia is a rich country in biotic and abiotic natural resources that need to be protected for the prosperity and prosperity of its people. So it takes the creative power of community groups to protect the resources and creativity that in the long run impact on economic development. IPR is one of the strategies to protect it.

Keywords: creativity, economy impact, intellectual property rights, natural resources

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Study of Microencapsulate Characteristics of Ficus lyrata Warb Fruit extract as Antimicrobial Agent

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Ficus lyrata fruit is a plant part that has a phytochemical compound such as tannin, flavonoid, and phenol which can inhibit the growth of microorganisms. The Ficus lyrata fruit liquid extract has not optimally used because of unstable and vulnerable to damage due to its high water content. Microencapsulation process using arabic gum and maltodextrin coating material can protect antimicrobial compounds. The antimicrobial activity identified by inhibition zone diameter to against Bacillus subtilis, Escherichia coli, and Pseudomonas aeroginosa. This research aims to determine the ratio of gum arabic and maltodextrin produce characteristic of microencapsulate with the best effectiveness of antimicrobial. The study was conducted by experimental method, followed by randomized block design in five treatments, by adding coating materials with ratios of Arabic gum: maltodextrin of 0:100; 25:75; 50:50; 75:25; and 100:0 with Duplo replication. The result showed the best microencapsulate produced by adding arabic gum and maltodextrin that with ratio 50:50 with characteristics 1.4% of moisture content, 52.22% of yield, 12.22% hygroscopicity rate, 96.64% solubility, 0,55 mm of inhibition zone, qualitatively of phenolic, tannin and flavonoid with total phenol of 1.40% and total tannin of 0.50%.

Key words: antimicrobial, Ficus lyrata fruit, gum arabic, maltodextrin, microencapsulation