

Poster Session III

15:30~16:20, June 24 (Saturday), 1st and 2nd floors International Conference Hall

(Poster # PA-33~PA-48; PC-6~PC-11; PD-25~PD-35; PE-17~PE-24; PF-13~PF-19; PG-11~PG-15)

Topic A: Agro-biotechnology and Natural products

PA-33: Evaluation the potential of banana peel extracts as angiotensin converting enzyme inhibitor and identification of its active ingredients

Cho-Hua Yang¹, Jei-Fu Shaw², Ming-Tsai Liang³, Yong-Han Hong¹, Hsia-Fen Hsu¹, Jer Yiing Houng^{1,3,*}

¹Department of Nutrition, I-Shou University, Kaohsiung, Taiwan ²Department of Biological Science and Technology, I-Shou University, Kaohsiung, Taiwan ³ Institute of Biotechnology and Chemical Engineering, I-Shou University, Kaohsiung, Taiwan Email: jyhoung@isu.edu.tw Project no: MOST102-2632-B-214-001-MY3

PA-34: Improve evaluation of antioxidant and functional study *Haematococcus pluvialis*

Yo-Hua-Chou^{1, 2}, Shu-N-La^{3*}, ¹Department of Biotechnology, Southern Taiwan University of Science and Technology ²Email: ma4h0106@stust.edu.tw ³Email: shunlai@stust.edu.tw

PA-35: Identification and effectiveness on the plant growth promotion from *Bacillus licheniformis* and *Bacillus megaterium*

Wu, Ying-Shan, Wang, Huei-Liang* [Yanchao Campus] : 82444 No.62, Shenhong Rd., Yanchao District, Kaohsiung City 82446, Taiwan (R.O.C.) Email:love19921005@gmail.com

PA-36: Antibacterial effect of emulsified pummelo peel oil and water-soluble chitosan on *Staphylococcus aureus* and *Escherichia coli*

Yu-Hsin Lin^a, Chia-Hua Lin^b, Guan-Wen Chen^c *^a Department of Food and Beverage Management, Taipei College of Maritime Technology, 212, Sec. 9, Yen Ping N. Rd., Taipei, 111, Taiwan, ROC. ^b Department of Biotechnology, National Formosa University, 64, Wunhua Rd, Yunlin, 632, Taiwan, ROC. ^c Department of Food Science, National Taiwan Ocean University, 2 Pei-Ning Rd., Keelung, 202, Taiwan, ROC. E-mail: address:chengw@mail.ntou.edu.tw (*Corresponding author:G. -W. Chen)

PA-37: FT-IR spectrum profile of functional compositions from *Taxus mairei* extract

Jia-Jiun Lin, Bing-Lan Liu*, Department of Applied Chemistry, Chaoyang University of Technology, Taichung 41349, Taiwan, ROC. Email: s10532601@gm.cyut.edu.tw

PA-38: The influence of different cultivation strategies on the formation of bioactive ingredients in submerged culture of *Cordyceps militaris*

Rong-Jyun Lai¹, Fan-Chiang Yang*¹, Te-Wei Ma² ¹Department of Chemical and Materials Engineering, Tunghai University, Taiwan ² Department of Chemical Engineering, Army Academy, Taoyuan 32092, Taiwan Email : larryrandy7@gmail.com.

PA-39: Biological activities of the leaf essential oil from *Melaleuca leucadendra* and their applications in cosmetics and cleaning agents

Ssu-Hsien Ho, Yen-Ping Hsu, Sorgan S.K. Tai* , Department of Biotechnology, National Formosa University. Email: sorgan@nfu.edu.tw

PA-40: Effects of *Rubus rosifolius* extracts on antioxidation and inhibitory activities of glucosidase, tyrosinase and xanthine oxidase

Ching-Ching Fu^{1*}, Szu-Pei Wu², Tzann-Shun Hwang¹, ¹Graduate Institute of Biotechnology, Chinese Culture University, Taipei, Taiwan ²Department of Biotechnology and Pharmaceutical Technology, Yuanpei University, Hsinchu City, Taiwan Ching-Ching Fu. Email: glffcc88@yahoo.com.tw

PA-41: Study on the optimum extraction of triterpenoids from loquat flower

Gee- Kaite Yu¹, Tse-Chun Lin¹ (communication author), ¹. Department of Food Science and Technology, Central Taiwan University of Science and Technology.

PA-42: 5-HT₄ analysis and gastrointestinal tract function effect of black garlic extract

Yi-An Chen¹, Hsien-Hao Tsen², Keng-Fan Liu³, Jen-Hsiang Yeh², Chaokai Chang¹, Jen-Chieh Tsa^{2*}, Chang-Wei Hsieh^{2,4*} ¹Department of Bioindustry Technology, Da-Yeh University, 168 University Rd, Dacun, Chang-Hua, Taiwan, Republic of China. ² Department of Medicinal Botanicals and Health Applications, Da Yeh University, 168 University Rd, Dacun, Chang Hua, Taiwan, Republic of China. ³ School of Chinese Pharmaceutical Sciences and Chinese Medicine Resources, College of Pharmacy, China Medical University, Taichung Taiwan, Republic of China. ⁴ Department of Food science and biotechnology, National Chung Hsing University, 145 Xingda Rd, South Dist, Taichung Taiwan, Republic of China. Email: welson@nchu.edu.tw MOST #:105-2622-E-212-004-CC2

PA-43: To investigating the mechanism of high voltage electrostatic field (HVEF) for the deterioration of tomatoes.

Shu-Hui Lin¹, Chi-En Liu¹, Chao-Kai Chang², Shu Wei Chang^{1†}, Chang-Wei Hsieh^{3*}, ¹Department of Medicinal Botanicals and Health Applications, Da-Yeh University, 168 University Rd, Dacun, Chang-Hua, Taiwan, Republic of China. ²College of Biotechnology and Bioresources, Da-Yeh University, 168 University Rd, Dacun, Chang-Hua, Taiwan, Republic of China. ³Department of Food Science and Biotechnology, National Chung Hsing University, 145 Xingda Rd, South Dist, Taichung City, Taiwan, Republic of China. Corresponding Author Email: welson@nchu.edu.tw * swchang@mail.dyu.edu.tw † MOST #:104-2221-E-005 -098 -MY2

PA-44: Optimization of *Paphiopedilum micranthum* "VIET" regeneration for industrial application

Tien-Binh Vu, Sorgan S.K. Tai* Department of Biotechnology, National Formosa University. Email: sorgan@nfu.edu.tw

PA-45: Study on antioxidant activity of water and ethanol extracts from *Ligustrum* sp. leaves *in vitro*

Wen-Qi Wang¹, Bi-Fang Zhang¹, Yu-Wen Cheng¹, Shih-Chung Yu², Jane-Yii Wu^{1,3,4*}, ¹Department of BioIndustry Technology, Da-Yeh University, No. 168, University Rd., Dacun, Changhua 51591, Taiwan(R.O.C.) ²Department of Environmental Engineering, Da-Yeh University, No. 168, University Rd., Dacun, Changhua 51591, Taiwan(R.O.C.)³Innovation Incubator Center, Da-Yeh University, No. 168, University Rd., Dacun, Changhua 51591, Taiwan(R.O.C.)⁴ Center for Biotechnology, Da-Yeh University, No. 168, University Rd., Dacun, Changhua 51591, Taiwan(R.O.C.) E-mail: jywu@mail.dyu.edu.tw

PA-46: Using headspace solid phase microextraction-gas chromatography mass spectrometry analysis the chiral volatile components of *L. cinnamomum* leaf in Taiwan

Ya-Chen Yang^{1,2}, Ying-An Chen¹, Chuan-Chen Lee^{1,2,*}. ¹Department of Health and Nutrition Biotechnology, Asia University, 500, Lioufeng Rd., Wufeng, Taichung 41354, Taiwan ²Food Safety and Inspection Center, Asia University, 500, Lioufeng Rd., Wufeng, Taichung 41354, Taiwan. Email: clee168@asia.edu.tw

PA-47: Ornamental bromeliads *Guzmania "Cherry"* after the acetylene treatment, the expression of photosynthesis and carbohydrate metabolism-related gene and its role in the flowering process.

Tsung-Chun, Hsieh¹, Chun-Yu, Chang¹, Ping-Lung, Huang³, Jong-Kang, Liu^{1,*}, Li-Jen, Liao^{2,*} ¹ Department of Biological Sciences, National Sun Yat-sen University, Kaohsiung 804, Taiwan ² Department of Biotechnology, National Kaohsiung Normal University, Kaohsiung 824, Taiwan ³ Kaohsiung District Agricultural Research and Extension Station, Pingtung County 908, Taiwan

PA-48: The importance of biochemical metabolic reactions and physical strength of the membrane structure in sorghum stress physiology.

Chun-Yu, Chang¹, Tsung-Chun, Hsieh¹, Min-Lang Chang³, Chung-Lung, Cho^{1,*}, Li-Jen, Liao^{2,*} ¹ Department of Biological Sciences, National Sun Yat-sen University, Kaohsiung 804, Taiwan ² Department of Biotechnology, National Kaohsiung Normal University, Kaohsiung 824, Taiwan ³ Department of Livestock Management, Branch of Heng-Chun, Institute of Livestock Research, Council of Agriculture Executive Yuan, Heng-Chun 946, Taiwan

Topic C: Biocatalysis & Protein Engineering

PC-6: Expression and function of the hemoglobin-beta, alpha-1-microglobulin fusion protein

Yo-Ting Chen And Kuang-Tse Huang* Department of Chemical Engineering, National Chung Cheng University, 168 University Rd., Minhsiung, Chia-yi Taiwan. Email: chmkth@ccu.edu.tw MOST 105-2221-E-194-051

PC-7: Identification of three hydrolase-like genes from sesame during germination

Zi-Hsien Huang, And Douglas J. H. Shyu*. Department of Biological Science and Technology National Pingtung University of Science and Technology, Pingtung 912, Taiwan. E-mail: dshyu@mail.npust.edu.tw

PC-8: Biochemical and inhibitory characterization of tailor-made hcv proteases against hexapeptide inhibitor demec

Nhung Thi Tuyet Tran¹, Szu-Pei Wu², Tzann-Shun Hwang^{1*}. ¹Graduate Institute of Biotechnology, Chinese Culture University, Taipei, Taiwan ²Department of Biotechnology and Pharmaceutical Technology, Yuanpei University, Hsinchu City, Taiwan Nhung Thi Tuyet Tran. Email: tranthituyetnhung@tdt.edu.vn

PC-9: Isolation, characterization, and overexpression of a novel keratinase from feather waste

Yu-Ze Dong, Po Ting Chen* .Department of Biotechnology, Southern Taiwan University of Science and Technology. Email: ptchen@stust.edu.tw

PC-10: Screening indigenous microalgae for protein production and identification

Yu-Cheng Lai, Shih-I Tan, Ying-Chen Yi, And I-Son Ng* Department of Chemical Engineering, National Cheng Kung University, Tainan 701, Taiwan Email: yswu@mail.ncku.edu.tw MOST-105-2218-E-006-021

PC-11: Exploring the structural stability of human gamma-d crystalline protein using the residual dipolar couplings technique combined with chemical unfolding

Shu-Shun Hsueh¹, Steven S.-S. Wang¹, Ta-Hsien Lin^{3,4,*}, Josephine W. Wu². ¹Department of chemical engineering, National Taiwan University ²Basic Research Division, Medical Research Department, Taipei Veterans General Hospital ³Institute of Biochemistry and Molecular Biology, National Yang-Ming University ⁴Department of Optometry, Central Taiwan University of Science and Technology. Email: thlin4@ym.edu.tw; 107658@ctust.edu.tw MOST#105-2113-M-166-001-

Topic D: Biomedical Science & Engineering

PD-25: Basal medium optimization and the impact on the suspension adapted CHO-DXB11-S1 high producing cell line in chemically defined medium

Bor-Shiun Chen, Hsin-Lin Lu and Wei-Kuang Chi*. Bioengineering Department, Biologics Institute, Development Center for Biotechnology No. 101, Lane 169, Kangning St., Xizhi District, New Taipei City, 22180, Taiwan E-mail: bosiuche@dcb.org.tw; hllu9999@dcb.org.tw, weikchi@dcb.org.tw

PD-26: Functional ginger extracts from supercritical fluid carbon dioxide extraction via in vitro and in vivo assays

Chin-Ying Huang, Hui-Min David Wang. ¹Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taiwan

PD-27: Preparation and biological function of the hydrolyzed protein from *Chlorella* sp.

Xin-Hua Wan, Jhong-Fu Jian, Tsung-Hsien Lin, Chiu. Mei Kuo, Chih-Sheng Lin*. Department of Biological Science and Technology, National Chiao Tung University, Hsinchu, Taiwan. E-mail: lincs@mail.nctu.edu.tw. MOST :106-3113-E 006-011

PD-28: Lipase-catalyzed hydrolytic resolution of trans-2-phenylcyclopropane-1-carboxylic 1,2,4-triazolide for preparation of (1S,2S)-stereoisomer

Yan-Ru Ye*, Shau-Wei Tsai. Graduate Institute of Biochemical and Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan. Correspondence: *Yan-Ru Ye; mymelody811217@gmail.com. MOST 104-2221-E-182-058-MY2

PD-29: Serum – free expanded human hematopoietic stem cells induce to monocytes in vitro

Ching-Min Chuang¹, Yi-Ting Lai¹, Yu-Ting Wang¹, Chao-Ling Yao^{1, 2}. ¹ Department of Chemical Engineering and Materials Science, Yuan Ze University; ² Graduate school of Biotechnology and Bioengineering, Yuan Ze University, Taoyuan City, Taiwan. Email: Yao@saturn.yzu.edu.tw. MOST #: 104-2628-E-155-002-MY3

PD-30: Fabrication of human bronchial epithelium culture platform for inhalation drug development

Hsin-Lin Hsieh, Jen-Huang Huang*. Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan. Email: jenuhuang@mx.nthu.edu.tw. MOST #:105-2218-E-007-024-MY2

PD-31: Culture of *Endothelial progenitor* cells on poly(glycerol sebacate) and poly-3-hydroxybutyrate copolymer for vascular tissue engineering

Ku-Yu Xieh¹, Chao-Ling Yao^{1*}. ¹ Department of Chemical Engineering and Materials Science, Yuan Ze University, Taoyuan City 32003, Taiwan. *yao@saturn.yzu.edu.tw. MOST 104-2628-E-155-002-MY3

PD-32: Dependence of corneal keratocyte adhesion, spreading, and integrin β 1 expression on deacetylated chitosan coating

Chung-Cheng Lo¹, Jui-Yang La^{2*}. ¹ Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan 33302, Taiwan ² Institute of Biochemical and Biomedical Engineering, Chang Gung University, Taoyuan 33302, Taiwan. Email: jylai@mail.cgu.edu.tw

PD-33: Anti-inflammatory effect of *Ophiocordyceps sinensis* mycelium in lps-induced acute lung injury mice.

Wei-Che Lo¹, Ya-Han Hsu¹, Tai-Hao Hsu², and Ching-Hua Yeh^{1*}. ¹ Department of Medicinal Botanicals and Health Applications, Da-Yeh University, Dacun, Changhua, 51591, Taiwan ² Department of BioIndustry Technology, Da-Yeh University, Dacun, Changhua, 51591, Taiwan. Email: a2121850@yahoo.com.tw

PD-34: Detection of immune responses induced by nanocrystalline chitosan granules coated

Su Jiahui, Lin Yajing¹, Chen Junlin². Department of Biology, National Sun Yat-sen University, Department of Biotechnology, Fuying University of Science and Technology, Department of Biology, National Sun Yat-sen University No. 70, Lianhai Road, Gushan District, Kaohsiung City. sgh017235@mail2000.com.tw

PD-35: Development of a serum-free freezing medium for hematopoietic cells Yi-Chen Wei¹,

Chao-Ling Yao^{1,2*}. ¹ Department of Chemical Engineering and Materials Science, Yuan Ze University, Taoyuan city, Taiwan ² Graduate School of Biotechnology and Bioengineering, Yuan Ze University, Taoyuan city, Taiwan. Email: yao@saturn.yzu.edu.tw. MOST: 105-2632-E-155-001

Topic E: Bioenergy & Biorefinery

PE-17: 奈米乳化法用於製備生質柴油之特性研究

林成原¹ 郭庭睿². ¹ 國立台灣海洋大學 輪機工程學系 ² 國立台灣海洋大學 輪機工程研究所

PE-18: Process development for the separation of arabinose and galactose by simulated moving bed

Chih-Hsiung Lin¹, Po-Shu Tseng¹, Winda Indayang¹, Ru-Chen Liang² Ming-Tsai Liang^{1*}. ¹ Department of Chemical Engineering, I-Shou University, Kaohsiung, Taiwan, R.O.C. ² Jope technology Co, 31, Anlin 3rd St., Yanchao Dist., Kaohsiung, Taiwan, R.O.C. *Corresponding author: mtliang@isu.edu.tw

PE-19: Feasibility study of bioenergy recycling using medicinal herbs as electron shuttles

Jia-Hui Liao, Chung-Chuan Hsueh*, Bor-Yann Chen* Department of Chemical and Materials Engineering, National Ilan University, Email: boryannchen@yahoo.com.tw, lisa22684047@gmail.com MOST #105-2221-E-197-022, 105-2622-E-197-012-CC3

PE-20: Process simulation of biomass gasification in a bubbling fluidized bed reactor using Aspen plus

*Jung-Chin Tsai**, Hsiang-Yun Chang, Yu Syuan, Tsai. Department of Chemical Engineering, Ming Chi University of Technology, New Taipei City, 24301, Taiwan. Email: jct sai@mail.mcut.edu.tw

PE-21: Feasibility study of toluene removal from wastewater by varying combination of anode material in microbial fuel cells

Yu-Cyuan Lai, Jhe-Wei Ye, Chi-Wen Lin*. Department of Safety, Health and Environmental Engineering, National Yunlin University of Science and Technology, 123 University Rd., Sec. 3, Douliou, Yunlin 64002, Taiwan. Email: Linwen@yuntech.edu.tw. MOST 105-2221-E-224-003

PE-22: Investigation of electrochemical approach for biochemical analysis of microbial culture system

Jian-An Su, John Chi-Wei Lan*. Bio-refinery and Bioprocess Engineering Laboratory, Department of Chemical Engineering and Materials Science. Email: rsps810352kent@gmail.com

PE-23: Enhancing sachharification rate of water hyacinth by microwave heating method

Yuan-Chung Lin^{1, 2*}, Sumarlin Shangdiar¹, Shang-Cyuan Chen¹, Che-An Cho¹, Tzi-Yi Wu³. ¹Institute of Environmental Engineering, National Sun Yat-sen University, Kaohsiung 80424, Taiwan. ²Ph.D. Program in Toxicology, College of Pharmacy, Kaohsiung Medical University, Kaohsiung 80708, Taiwan. ³Department of Chemical Engineering and Materials Engineering, National Yunlin University of Science and Technology, Yunlin 64002, Taiwan. Email: yuanchung.lin@gmail.com

PE-24: Microbial biodiesel production by direct transesterification of *Rhodotorula glutinis* with alkaline catalyst

Wei-Chen Kao, Chun-Ling Chen, Shih-Jie Chen, Chi-Yang Yu*. Department of Bioengineering, Tatung University, 40 Zhongshan N. Rd. Sec.3, Taipei 10452, Taiwan. Email: chrisyu@ttu.edu.tw MOST #:105-2621-M-036-001-MY2

Topic F: Bioprocess Technology & Engineering

PF-13: Recovery of copper from wastewater coupled with power generation using carbide porous ceramics as air cathode in a membrane-less microbial fuel cell

Yu-Hsiu Chen, Pei-Hsuan Chang, You-Rong Chen, Chi-Wen Lin* Department of Safety, Health and Environmental Engineering, National Yunlin University of Science and Technology, 123 University Rd., Sec. 3, Douliou, Yunlin 64002, Taiwan Email: Linwen@yuntech.edu.tw. MOST 105-2221-E-224-003

PF-14: Study of an artificial neural network for the control of a genetic engineering cellulase production process

Chau-Yun Hsu¹, Guillermo Romero Moreno¹, Tuan-Hua David Ho², Ting-Yen Huang³, And C. Will Chen^{3*}. ¹Graduate Institute of Communication Engineering, Tatung University, Taipei 104, Taiwan, ²Institute of Plant and Microbial Biology, Academia Sinica, Taipei 115, Taiwan, ³Department of Bioengineering, Tatung University, Taipei 104, Taiwan, Email: sporamin@yahoo.com.tw. MOST 106-3113-E-036-001 -CC2

PF-15: Study of medium composition for enhancing ectoine production by *Sinobaca* sp. H19

Tzu-Chia Peng, Shan-Yu Chen*. Yuan Ze University Graduate School of Biotechnology and Bioengineering,

johnny031282@gmail.com. MOST #:104-2632-E-155-001

PF-16: Effects of additives on production of exogenous protein system in rice cell

Yung- Hsing Yang¹, Yu-Kuo Liu². ¹ Institute of Biochemical and Biomedical Engineering, Chang Gung University, Taiwan. Email: ykliu@mail.cgu.edu.tw

PF-17: Preparation of magnetic silica/hydroxyapatite composites for C-phycoyanin and allophycocyanin adsorption

Yi Chien Wan, Shu-Jen Chen*. Department of Chemical and Materials Engineering, National Kaohsiung University of Applied Sciences, Kaohsiung, 80778, Taiwan. *Email: biochen@kuas.edu.tw

PF-18: Kinetics of a novel cellulases-complex and fed-batch hydrolysis of sugarcane bagasse

Chung-Kai Liu and Wen-Chang Chen*. Department of Chemical & Materials Engineering, National Yunlin University of Science & Technology, Yunlin 64002, Taiwan, R.O.C. * E-mail: chenwc@yuntech.edu.tw

PF-19: The enhancement of γ -linolenic acid (GLA) production during the fermentation of *Mortierella isabellina*

Ching-Lun Tsai, Hong-Wei Yen*. Department of Chemical and Materials Engineering, Tunghai University

Topic G: Environmental Biotechnology

PG-11: Surface tension and emulsification properties of pineapple peel waste liquid fermented by *Rhodotorula glutinis*

Yaw-Nan Chang*, Ya-Wei Liao, Ching-Chun Su, and Shen-Mei Liao. Department of Biotechnology, College of Applied Arts and Sciences, National Formosa University, Huwei Township, Yunlin County, Taiwan 632, Republic of China. *Email: nelson@nfu.edu.tw MOST105-221-E-150-067

PG-12: Kinetics of heterogeneous esterification for the synthesis of propyl levulinate

Hsin-Jung Tsai, Po-Hsien Chen, Hsien-Tsung Wu*. Department of Chemical Engineering, Ming Chi University of Technology 84 Gungjuan Rd., Taishan, New Taipei City 24301, Taiwan. * Corresponding author, e-mail: stwu@mail.mcut.edu.tw

PG-13: Screening, isolation and characterisations of potentail carotenoid producer, *Gordonia terrae* RH01

Kuan-Chieh Huang, John Chi-Wei Lan* Bio-refinery and Bioprocess Engineering Laboratory, Department of Chemical Engineering and Materials Science. Email: sy26842684@gmail.com

PG-14: Development of gold recovery protein electrode from aqueous systems

Kuo-Wei Huang¹*, Kai-Chun Fan², Yin-Lung Han³. ¹ Industrial Technology Research Institute, Associate researcher ² Industrial Technology Research Institute, Researcher ³ Industrial Technology Research Institute, Senior researcher. Email: spencerhuang@itri.org.tw

PG-15: Ecological study of antibiotic-bearing microalgal and bacterial cocultures for biorefinery applications

An-Chi Cheng, Chung-Chuan Hsueh*, Hua-Wei Chen*, Bor-Yann Chen*. Department of Chemical and Materials

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