

Poster Session II

10:00~10:50, June 24 (Saturday), 1st and 2nd floors International Conference Hall

(Poster # PA-17~PA-32; PB-6~PB-10; PD-13~PD-24; PE-9~PE-16; PF-7~PF-12; PG-6~PG-10, PH-5~PH-8)

Topic A: Agro-biotechnology and Natural products

PA-17: Study on the technology of establishing low-carbon ecology by using aquaponics system

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PA-18: The anti-fibrotic effects triggered by bee venom in mice infected with *Schistosoma mansoni*

Meng-syun Wu, Shih-Yi Peng*, Department of Biochemistry, school of medicine, Tzu Chi University, Hualien, Taiwan

PA-19: Effects of color and intensity of led light on the formation of primordium and fruiting body with bioactive ingredients of cordyceps militaris in solid culture

Shih-Ching Chao, Shih-Liang Chang Wen-Kuang Hsu and Yu-Ting,Lin And Tai-Hao Hsu*, Department of Bioindustry Technology, Da-Yeh University, No.168, University Rd.,Dacun, Changhua 51591, Taiwan (R.O.C.). Email:th0123@mail.dyu.edu.tw MOST 105-2622-E-212-002 -CC2

PA-20: The utility of bioresource as cultivation medium

Yeh Juchun, Li Pomin, Chang Poya, National Pingtung University of Science and Technology, Department of Biomechatronics Engineering, 1, Shuefu Road, Neipu, Pingtung 91201,Taiwan

PA-21: Submerge-cultured *Eurotium cristatum* attenuates acetaminopheninduced liver injury in mice by inhibiting oxidative stress via nuclear factor erythroid 2-related factor-2 activation

Mei-Chin Mong¹ , Yuh-Shuen Chen² , Yi-Jun Lin³ , Chun-Hung Chiu^{3,4*}, ¹Department of Health and Nutrition Biotechnology, Asia University, Taichung ²Department of Food Science and Technology, Hungkuang University, Taichung ³Research Institute of Biotechnology, Hungkuang University, Taichung ⁴Bachelor Degree Program in Animal Healthcare, Hungkuang University, Taichung Email: chchiu@hk.edu.tw

PA-22: Study on enhancing antioxidant capacity of garlic by adding tea

Shih-Hsien Hsu¹ , Jen-Hsiang Yeh¹ , Yi-An Chen² , Jen-Chieh Tsa¹† , Chang-Wei Hsieh³ *, Jung-Tsung Wu⁴ ,¹ Department of Medicinal Botanicals and Health plications, Da-Yeh University, 168 University Rd, Dacun, Chang-Hua, Taiwan, Republic of China. ²Biotechnology Research Center, Da-Yeh University, 168 University Rd, Dacun,ChangHua, Taiwan, Republic of China. ³ Department of Food Science and Biotechnology National Chung Hsing University 250 Guoguang Rd, Southern District, Taichung, Taiwan, Republic of China. ⁴ All Wealth Biotech CO , LTD.17Ding Shan Rd Xiamen Haicang District biomedical port Xiamen, China Email: jenchieh@mail.dyu.edu.tw †welson@nchu.edu.tw* MOST #:105-2622-E212-004-CC2

PA-23: Purification of cellulose and lignin from rice husks and peanut shells

*Dih-Yang Kuo, Szu-Yu Chen, Shing-Yi Suen**, Department of Chemical Engineering, National Chung Hsing University, 145 Xingda Road, Taichung 402, Taiwan Email: sysuen@dragon.nchu.edu.tw MOST #: 105-2218-E-005-006

PA-24: Effect of extracts of weeds on antioxidant activities and total polyphenols

*Hsiao-Ching Lin, Ya-Ling Wang, Yu-Ting Chen, Jian-Lun Zeng, Jun-Hong Lin**. Department of Natural Biotechnology, Nanhua University, Dalin, Chiayi, 62248, Taiwan. Email: jhlin@nhu.edu.tw

PA-25: Influence of alternating current electric field processing on the oxidation index of tomato.

Xin-Yi Peng¹, Ting-Wei Hsu¹, Chi-En Liu¹, Chao-Kai Chang², Po-Hsien Li^{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* pohsien@mail.dyu.edu.tw† MOST #:104-2221-E-005 -098 -MY2

PA-26: A new strain *Bacillus pumilus* HK02 with potential ability to degrade chicken feather and feather powder

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PA-27: Optimizing the harvest time of *Curcuma longa* for productive curcumin

Ying-Sheng Chuang¹, Ming-Tao Hsu², Cheng-I Lee^{1}*, ¹Department of Life Science, National Chung Cheng University, Min-Hsiung Chia-Yi 62102, Taiwan. ²Linkage Biotech LTD, No. 29-3, Lane 4, De-Chang St., Qianzhen Dist. Kaohsiung, 80664, Taiwan. Email: biocil@ccu.edu.tw, MOST: 105 2622-M-194-004-CC2

PA-28: Protease hydrolysis of cobia liver and evaluation antioxidant activity of hydrolysates by *in vitro* simulated gastrointestinal digestion

Yu-Hsiang Wang¹, Mei-Ling Tsai¹, Pei-Pei Sun^{1,} and Chia-Hung Kuo^{1,*}*, ¹Department of Seafood Science, National Kaohsiung Marine University, Kaohsiung, Taiwan. Email: ppsun@webmail.nkmu.edu.tw (P.P.S.); chkuo@webmail.nkmu.edu.tw (C.H.K.) (MOST 104-2218-E-022-001-MY2)

PA-29: Optimization of the operation conditions for extraction of triterpenes and polysaccharide from *Antrodia camphorata* by response surface methodology

Hsin-I Yeh¹, Hsia-Fen Hsu¹, Shih-Wei Wang², Jer-Yiing Houn^{1,3,}*, ¹Department of Nutrition, I-Shou University, Kaohsiung City, Taiwan ²Division of Allergy, Immunology, and Rheumatology, Department of Internal Medicine, E-DA Hospital, Kaohsiung City, Taiwan ³Department of Chemical Engineering, I Shou University, Kaohsiung City, Taiwan Email: jyhoung@isu.edu.tw Project no: EDAHP104021

PA-30: Preliminary field studies of *Beauveria bassiana* on pest control and improvements to wettable powder formulations

*Meng-Che Wu, Cheng-Yi Lin, Yen-He Chen, Bing Lan Liu**, Department of Applied Chemistry, Chaoyang University of Technology, Taichung 41349, Taiwan, ROC Email: mengjhe@cyut.edu.tw, MOST: 103-2632-E-324-002-MY

PA-31: Isolation and optimization of serine protease class enzyme from *Streptomyces laurentii* n74-3 and its activity against ORSV

Chia-Wei Hung, Bing-Lan Liu*, Department of Applied Chemistry, Chaoyang University of Technology, 168, Jifeng E. Rd, Wufeng District, Taichung, Taiwan (R.O.C). Email: viji.m6@gmail.com MOST: 105-2632-B-224-001

PA-32: Utilization of bacteria to enhance plant heat tolerance: a case study with *Arabidopsis thaliana* as a platform

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Lsyong69@nfu.edu.tw

Topic B: Metabolic Engineering and Synthetic Biology

PB-6: Heterologous expression of glucose isomerase in *Gluconacetobacter xylinus* to enhance bacterial cellulose production

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PB-7: The construction of reductive tricarboxylic acid cycle in *Escherichia coli* for in situ CO₂ recycling

I-Ting Tseng¹, Sho-Chen Lo², Ching-Hsun Chen¹, Chia-Hua Yu², Chu-Han Huang², Dong-Yan Wu², Chieh-Chen Huang^{2*}, Si-Yu Li^{1*}
Department of Chemical Engineering¹, Department of Life Sciences², National Chung Hsing University, Taichung 402, Taiwan Email: jj1242540jj@gmail.com
MOST-103-2221-E-005-072-MY3, MOST-104-2621-M-005-004-MY3

PB-8: Metabolic engineering of *Escherichia coli* to produce n-butanol using crude glycerol

Jung-Heng Wen¹, Mukesh Saini¹, Chung-Jen Chiang², Yun-Pegn Chao¹. ¹Department of Chemical Engineering, Feng Chia University, 100 Wenhwa Road, Taichung, Taiwan ²Department of Medical Laboratory Science and Biotechnology, China Medical University, No. 91, Hsueh-Shih Road, Taichung, Taiwan. Email: ypchao@fcu.edu.tw. MOST 105-2221-E-035-085-MY3

PB-9: Cluster analysis for metabolic network structures of normal and cancer cells

Wen-Chi Pan, Feng-Sheng Wang*. Department of Chemical Engineering, National Chung Cheng University, Chiayi, 62102, Taiwan Email: chmfsw@ccu.edu.tw MOST 103-2221-E-194-045-MY3
MOST 105-2627-M-1994-001

PB-10: Cluster analysis for metabolic network structures of normal and cancer cells

Hsin-Yi Teng, Jhih-Sing Lee, and Wen-Chien Lee* Department of Chemical Engineering, Systems Biology and Tissue Engineering Research Center, National Chung Cheng University, Chiayi, Taiwan Email: chmwcl@ccu.edu.tw

Topic D: Biomedical Science & Engineering

PD-13: Yeast expression platform : Construction of expression vector without kex2 cutting site in the signal peptide

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Biotechnology, Taiwan Add : 101, Lane 169, Kangning St., Xizhi Dist, New Taipei City 22180, Taiwan
chienwanlin@dcb.org.tw. MOST #: 105-EC-17-A-22-1017

PD-14: Study on the detection methods of bacterial endotoxins for injection

Hsiu-Ling Lin, Po Ting Chen*. Department of Biotechnology, Southern Taiwan University of Science and Technology. Email: ptchen@stust.edu.tw

PD-15: Fabrication of coaxial electrospun fibrous mats for controlled drug release

Che-Min Lin, Hsuan-Yu Tung, Ting-Yun Kuo, Hsyue-Jen Hsieh*. Department of Chemical Engineering, National Taiwan University, No.1, Sec. 4 Roosevelt Rd. Taipei, Taiwan 10617 Email: hjhsieh@ntu.edu.tw; MOST #105-2221-E-002-202

PD-16: Construction of *in vitro* human breathing lung model for inhalation drug development

Chun-Kai Lin, Jen-Huang Huang*. Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan. Email: jenuang@mx.nthu.edu.tw; MOST #:105-2218-E-007-024-MYZ

PD-17: Effect of polyethylene glycol on insulin release via dissolving carboxymethyl cellulose microneedle patches

Syue-Jyun Ciou¹*, Shau-Wei Tsai². ¹Institute of Chemical and Material Engineering, Chang Gung University, Taiwan, ROC ²Graduate Institute of Biochemical and Biomedical Engineering, Chang Gung University, Taiwan, ROC Correspondence: *Syue-Jyun Ciou; lucky82412@gmail.com

PD-18: Effects of butyric acid produced by *E. coli* on colon cancer

Yu-Rong Wang¹, Hung, Yen-Hung², Yun-Peng Chao², Chung-Jen Chiang¹*. ¹Department of Chemical Engineering, Feng Chia University, 100 Wenhwa Rd., Taichung 40724, Taiwan
²Department of medical laboratory Science and Biotechnology, China Medical University, 91 Hsue Shih Road, Taichung 40402, TAIWAN Email: cjchiang@mail.cmu.edu.tw. MOST 105-2221 E-039-010-MY3

PD-19: Construction of a multi-cultured human lung platform for tumor metastasis study

Bing-Syuan Ni, Jen-Huang Huang*. Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan. Email: jenuang@mx.nthu.edu.tw MOST#: 105-2218-E-007-024-MY2

PD-20: Tetracycline loaded floating alginate beads for inhibition of *Helicobacter pylori*

Yu-Tung Hsu¹, Oyundari Amartuvshin¹, Chen-Yu Kao^{1,2}*. ¹Graduate Institute of Biomedical Engineering, National Taiwan University of Science and Technology, Taipei, 10607, Taiwan; ² Department of Biomedical Engineering, National Defense Medical Center, Taipei, 11490, Taiwan. Email: ckao@mail.ntust.edu.tw;

PD-21: Specificity enhancement of PCR and qPCR by using neutralized DNA (nDNA) primer and probe

Yu-Hsuan Chang, Wen-Yih Chen*. Department of Chemical & Materials Engineering, National Central University, Taoyuan, Taiwan. Email: sherry811202@gmail.com, wychen@ncu.edu.tw*

PD-22: Ophiocordyceps sinensis mycelium regulates renal inflammatory responses during lipopolysaccharide-induced acute kidney injury

Jia-Cin Jhang¹, Ya-Han Hsu¹, Tai-Hao Hsu², and Ching-Hua Yeh¹ *. ¹.Department of Medicinal Botanicals and Health Applications, Da-Yeh University, Dacun, Changhua, 51591, Taiwan ²Department of Biotechnology, Da-Yeh University, Dacun, Changhua, 51591, Taiwan. Email: b2625367@gmail.com

PD-23: Study on drug release of liposome-encapsulated antimicrobial peptide LL-37

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PD-24: Cardiolipin liposomes with curcumin and nerve growth factor for recovering cholinergic neuron activity in Alzheimer's disease pharmacotherapy

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Topic E: Bioenergy & Biorefinery

PE-9: An enzyme cocktail with cellulase boosters

Anandharaj. M^{1,2,3}, Yu-Ju Lin^{1,4}, Mei-Yeh Lu¹, Chieh-Chen Huang⁴, Juijen Chang⁵, Wen Hsiung Li¹*. ¹ Biodiversity Research Center, Academia Sinica, Taipei, Taiwan ²Molecular and Biological Agricultural Sciences Program, Taiwan International Graduate Program, National Chung Hsing University and Academia Sinica, Taipei, Taiwan ³Graduate Institute of Biotechnology, National Chung Hsing University, Taichung, Taiwan ⁴Department of Life Sciences, National Chung Hsing University, Taichung, Taiwan ⁵Institute for Advanced Biosciences, Keio University, Japan ⁵Department of Medical Research, China Medical University Hospital, Taichung, Taiwan. *Corresponding author: whli@gate.sinica.edu.tw; lancecjj@gmail.com*

PE-10: Biobutanol fermentation with immobilized cells using microalgal biomass as feedstock combining in- situ product removal to enhance butanol production

Ya-Jyun Lin¹, Yung-Chong Lo¹, Kuan-Jung Li¹ And Jo Shu Chang^{1,2,}. ¹Department of Chemical Engineering, National Cheng Kung University, Tainan, Taiwan ² Research Center for Energy Technology and Strategy, National Cheng Kung University, Tainan, Taiwan. E-mail: changjs@mail.ncku.edu.tw*

PE-11: The fermentable sugar from miscanthus and its application to cell growth

Hsien-Wen Lin, Fu-Yao Liu, Che-Chi Shu. Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei City, Taiwan. Email: ccshu2014@gmail.com. MOST#:105-2221-E-027-116*

PE-12: Incorporation of antimicrobial agents into the edible films and packing

GUAN-WEI, CHIU, YU-SHEN, CHENG. Department of Chemical and Materials Engineering, National Yunlin University of Science and Technology, Yunlin, 64002, Taiwan*

PE-13: Comparison of performance with azotobacter in different air cathode design microbial fuel cell

Chun-Yu, Ke^{1,a}, Hsiang-Yu, Wang^{1,b,}. ¹ Department of Engineering and System science, National Tsing Hua university, Taiwan. Email: ^a je1472@gmail.com, ^bhywang@ess.nthu.edu.tw. MOST#: MOST 103-2221-E-006-191-MY3*

PE-14: Supplement of carbon and nitrogen nutrients to enhance cellulase production using sugarcane bagasse under solid state cultivation

Li-Wei Chen, Cheng Cheng, Ching-An Lin, Kow-Jen Duan. Bioengineering Department, Tatung University, 40, Zhong-Shan N. Road, Sec. 3, Taipei, Taiwan. Email: duan@ttu.edu.tw MOST 105-3113-E-036-002 -CC2*

PE-15: Enhancing sachharification rate of water hyacinth by microwave heating method

Tzi-Yi Wu¹, Sumarlin Shangdiar², Shang Cyuan Chen², Che-An Cho², Yuan-Chung Lin^{2,3}.¹ Department of Chemical Engineering and Materials Engineering, National Yunlin University of Science and Technology, Yunlin 64002, Taiwan ² Institute of Environmental Engineering, National Sun Yat-sen University, Kaohsiung 80424, Taiwan. ³Ph.D. Program in Toxicology, College of Pharmacy, Kaohsiung Medical University, Kaohsiung 80708, Taiwan. Email: yuanchung.lin@gmail.com*

PE-16: Enzyme hydrolysis efficiency in different pretreatment

Yu-Yuan Kuo, Chi-Ruei He, Si-Yu Li . Department Of Cheimical Engineer, National Chung Hsing Universityno.145 Xingda Rd., South Dist., Taichung, Taiwan,R.O.C. 402 Email: mithrandir83705@gmail.com MOST-103-2221-E; 005-072-MY3 MOST-104-2621-M-005 -004 -MY3*

Topic F: Bioprocess Technology & Engineering

PF-7: Construction and co-cultivation of two mutant strains harboring key precursor genes for producing prodigiosin

Ya- Lien Ciou, Yin-Chen Lin, Wei-Chuan Chen, Min Jun Tsai and Yu-Hong Wei. Graduate School of Biotechnology and Bioengineering, Yuan Ze University, Chung-Li, Taoyuan 320, Taiwan. E-mail: yhwei@saturn.yzu.edu.tw. MOST#105-2622-8-007-009*

PF-8: Production of Cellulase by *Kluyveromyces marxianus*

Tzu-Hsiang Hung, Hong-Wei Yen. Department of Chemical and Materials Engineering, Tunghai University, Taiwan. Email : nathaniel820109@gmail.com*

PF-9: The effect of culture parameter on the cell growth and production in dasgip bioreactor

Chi-Chen Hsu, Chining-Jen Yang, Sheng-Jie Huang, Chun-En Yang, Bo-Ting Yu, Wei-Kuang Chi . Development Center for Biotechnology, Bioengineering Group of Institute of Biologics No. 101, Lane 169, Kang-ning Street, Xizhi Dist., New Taipei City. Email: Markhsu23@dcb.org.tw*

PF-10: The microbial antibodies secretion expression platform with scale-down fermentorS

Jen-Wei Chang, Chih-Hsi Fan, Wei-Hong Chen, Neng-Hsien Chang, Yi-Hua Huang, Wei-Kuang Chi. Institute of Biologics, Development Center for Biotechnology, No. 101, Lane 169, Kang-ning Street, Xizhi Dist., New Taipei City. Email: jenwei@mail.dcb.org.tw*

PF-11: The fermentation process development of *Rhodotorula glutinis* by using seawater and crude glycerol

Wei-Siang Liang, Hong-Wei Yen Department of Chemical and Materials Engineering, Tunghai University*

PF-12: Exploring a suitable fermentation strategy for the production of ectoine by *Halomonas salina* ECT1

*Ching-Cha Hsu ¹, Wei-Chuan Chen¹, John Chi-Wei Lan², Yu-Hong Wei¹ * ¹Graduate School of Biotechnology and Bioengineering, Yuan Ze University, Chung-Li, Taoyuan 320, Taiwan. ²Department of Chemical Engineering and Materials Science, Yuan Ze University, Chung-Li, Taoyuan 320, Taiwan. E-mail: yhwei@saturn.yzu.edu.tw MOST#105-2632 E-155-001*

Topic G: Environmental Biotechnology

PG-6: Effect of alove vera culture solution pH on hemicellulase production of microbe CT12

*Tse-Chun Lin*¹, *Chinshuh Chen*², *Gee-Kaite Yu*^{1,a} ¹Department of Food Science and Technology, Central Taiwan University of Science and Technology. ^a communication author ²Department of Food Science, Chung Hsing University

PG-7: Preparation and regeneration of protoplasts from *Bacillus licheniformis* B-1 and *Sphingomonas* sp. SC-1 for biodegradation of β -Cypermethrin

*Qiexi Chen*¹, *Chih-Ching Chien*², *Kai Yao*¹ * ¹College of Light Industry, Textile and Food Engineering, Sichuan University, Sichuan, China. ²Graduate School of Biotechnology and Bioengineering, Yuan Ze University, Taoyuan Taiwan.

PG-8: Moisturizing and oil absorption of chitosan with different degrees of chain breakage

*Feng-Chin Wu*¹, *Yung-Sheng Lin*¹, *Shih-Han Hung*¹, *Ru-Ling Tseng*². ¹Department of Chemical Engineering, National United University, Miao-Li ² Department of Safety, Health and Environmental Engineering, National United University, Miao-Li wfc@nuu.edu.tw MOST 105-2221-E-239-033

PG-9: Tolerance and biosorption of precious metals by heavy metal resistant microorganisms

Cheng Ma, *Chih-Ching Chien**. Graduate School of Biotechnology and Bioengineering, Yuan Ze University, Taoyuan, Taiwan. MOST #: 105-2221-E-155-001-MY3

PG-10: Antibacterial activity of quaternized chitosan/ polyvinyl alcohol nanofiber membrane

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Topic H: Micro- and Nano- Biotechnology

PH-5: Preparation of compound B nanoaggregates for improving storage stability of curcumin

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PH-6: pH-Dependent antimicrobial properties of copper oxide nanoparticles in staphylococcus aureus

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PH-7: Antimicrobial effects of Zero-valent iron nanoparticles on gram-positive bacillus strains and gram-negative *Escherichia coli* strains

Yi-Huang Hsueh^{1*}, *Ping-Han Tsai*¹, *Kuen-Song Lin*², *Wan-Ju Ke*³, *Chao-Lung Chiang*². ¹Graduate School of Biotechnology and Bioengineering, Yuan Ze University, Taoyuan, Taiwan ²Department of Chemical Engineering and Materials Science, Yuan Ze University, Taoyuan, Taiwan ³Department of Microbiology and Immunology,

Chang Gung University, Taoyuan, Taiwan.

PH-8: Microbial induced characteristics of nano zinc oxide and application

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