Enzyme Engineering XVIII

Poster Session A

1. **HIGH-THROUGHPUT MEASUREMENT OF PROTEIN STABILITY IN MICROTITER PLATES**

Paul A Dalby, Jean P Aucamp, Ana M Cosme, Gary J Lye

University College London, United Kingdom

2. **COMPUTATIONAL DESIGN FOR INCREASING ENZYME THERMOSTABILITY**

Young Je Yoo, Jeong Chan Joo, Tajo Abraham, Seung Pil Pack

Seoul National University, Korea

3. **THERMOPHILIC BACTERIAL LACCASE**

Kentaro Miyazaki

National Institute of Advanced Industrial Science and Technology (AIST), Japan

4. **STRUCTURAL AND FUNCTIONAL REGULATIONS OF ALPHA-SYNUCLEIN**

Doohun Kim

Ajou University, Korea

5. **STRUCTURE - ENDOGLYCOSIDASE ACTIVITY RELATIONSHIP OF HYALURONIDASE IN GLYCOSAMINOGLYCAN MICROENVIRONMENT**

Alexander V. Maksimenko, Elena G. Tischenko

Institute of Experimental Cardiology, Russian Cardiology Research-and-Production Complex, Russia

6. **CHARACTERIZATION OF AN EXTRACELLULAR ß-AGARASE FROM *AGARIVORANS* SP. JA-1**

Jong-Geun Jung, Jin-Wook Kim, Chi-Un Joo, Jae-Hwa Lee

Silla University, Korea

7. **DEVELOPING ENZYME CATALYSTS BY GENOME MINING**

Ling Hua

Southern Methodist University, Department of Chemistry, USA

8. **CLONING, EXPRESSION AND CHARACTERIZATION OF A NOVEL GLUCANHYDROLASE FROM LIPOMYCES STARKEYI**

Doman Kim, Hee-Kyoung Kang, Ji-Young Park, Joon-Seob Ahn
School of Biological Sciences and Technology, Chonnam National University, Korea

9. **SIGNIFICANTLY ENHANCED STABILITY OF GLUCOSE DEHYDROGENASE**

Sang-Ho, Baik, Fabrice Michel, Osamu Kagami, Richard Haser, Shigeaki Harayama
National Institute of Technology and Evaluation, Japan

10. **CHARACTERIZATION AND DIRECTED EVOLUTION OF HEMICELLULOLYTIC ENZYMES USING NATURAL XYLOOLIGOSACCHARIDE SUBSTRATES**

Kurt Wagschal, Diana Franqui-Espiet, Charles C. Lee, George H. Robertson, Dominic W.S. Wong
USDA / ARA / WRRC, USA

11. **STRUCTURE AND FUNCTION STUDIES OF METHYL PARATHION HYDROLASE**

Ya-Feng Zhou, Yan-Jie Dong, Lei Sun, Zi-He Rao, Xian-En Zhang
Wuhan Institute of Virology, Chinese Academy of Sciences, China

12. **DIRECTED EVOLUTION OF E. COLI ALKALINE PHOSPHATASE**

Ya-Feng Zhou, Xu Huang, Xian-En Zhang
Wuhan Institute of Virology, Chinese Academy of Sciences, China

13. **PROTEIN ENGINEERING OF GLYCEROL DEHYDRATASE**

Xiao-Song Tang, Katharine J. Gibson, Der-Ing Liao, Mark J. Nelson, Garry D. Dotson
DuPont Company, Central Research and Development Dept., USA

14. **DESIGN AND EVOLUTION OF AN ENZYME WITH NEW CATALYTIC ACTIVITY USING AN EXISTING PROTEIN SCA FFOLD**

Hak-Sung Kim, Hee-Sung Park, Sung-Hun Nam, Jin Kak Lee, Chang No Yoon, Bengt Mannervick, Stephen J Benkovic
Korea Advanced Institute of Science and Technology, Korea

15. **SEPARATION, CHEMICAL MODIFICATION AND PHARMACEUTICAL APPLICATION OF CHYMOPAPAIN**

Guo Yong, Zheng Suiping, Cai Xiaoling, Shu Wei
College of Bioscience and Biotechnology, South China University of Technology, China

16. **ROLE OF DISULFIDE BRIDGES IN FUNGAL PHYTASE'S FOLDING AND FUNCTIONALITY**

Abul H.J. Ullah, Edward J. Mullaney

Southern Regional Research Center, ARS, USDA, USA

17. **ENGINEERING CYTOCHROME P450 ENZYMES FOR INDUSTRIAL BIOCATALYSIS**

Vlada B. Urlacher, Sabine Eiben, Rolf D. Schmid, Leonard Kaysser

Institute of Technical Biochemistry, University of Stuttgart, Germany

18. **CHANGES IN ENZYME ACTIVITY AND SPECIFICITY OF *THERMUS* MALTOGENIC AMYLASE BY COMBINATORIAL MUTATION IN CONSERVED AMINO ACID RESIDUES**

Suwon Oh, Myoung-Uoon Jang, Chang-Ku Jeong, Jung-Mi Park, Kwan-Hwa Park, Tae-Jip Kim

Department of Food Science & Technology, Chungbuk National University, Korea

19. **IMPROVING NUCLEOSIDE PHOSPHORYLATION WITH HYBRID KINASES**

Monica L. Gerth, Stefan Lutz

Department of Chemistry, Emory University, USA

20. **HUMAN LIVER CYTOSOLIC SIALIDASE GENE ISOLATION USING SPLICING BY OVERLAP EXTENSION**

Cheorl-Ho Kim, Ki-Tae Ha, Sung-Koo Kang, Seok-Jong Seo, Un-Ho Jin

Dongguk University, Korea

21. **GLOW DISCHARGE INDUCED CHANGES IN THE ACTIVITY AND THE STRUCTURE OF ENZYMES**

Fahriye Ceyda Dudak, Urartu Ozgur Safak Seker, Ismail Hakki Boyaci, Jaroslav Kousal, Hynek Biederman

Department of Food Engineering, Faculty of Engineering, Hacettepe University, Turkey

22. **A NEW APPROACH FOR DETERMINATION OF ENZYME KINETICS CONSTANTS USING RESPONSE SURFACE METHODOLOGY**

Ismail Hakki Boyaci

Department of Food Engineering, Faculty of Engineering, Hacettepe University, Turkey

23. **ISOLATION AND FUNCTIONAL EXPRESSION OF NOVEL CYTOCHROME P450 HYDROXYLASE GENES FROM CYCLOSPORIN-MODIFYING ACTINOMYCETES SPECIES**

Eung-Soo Kim, Nam Sil Park, Ji Seon Myeong, Mi-Yeon Lee, Hyun-Joo Park, Kyuboem Han
Inha University, Dept.of biotechnology, Korea

24. **GENERATION OF LIPASE WITH INCREASED AMIDASE ACTIVITY BY DIRECTED EVOLUTION**

Yuichi Nakagawa, Jun Hiratake, Kanzo Sakata
Kyoto University Institute for Chemical Research, Japan

25. **THE MOLECULAR STRUCTURE AND CATALYTIC MECHANISM OF A BACTERIAL, QUORUM-QUENCHING N-ACYL HOMOSERINE LACTONE HYDROLASE**

Myung Hee Kim, Won-Chan Choi,Hye Ok Kang,Jong Seok Lee, Beom Sik Kang, Zygmunt S. Derewenda, Tae-Kwang Oh, Choong Hwan Lee, Jung-Kee Lee
Korea Research Institute of Bioscience and Biotechnology, Korea

26. **COMPLEMENTARY PROTEIN ENGINEERING APPROACHES FOR ALTERED TRANSKETOLASE SUBSTRATE SPECIFICITY**

Edward Hibbert
University College London, Dept. Biochemical Engineering, United Kingdom

27. **SCREENING OF MICROORGANISMS HAVING GLYCON HYDROLYSIS ACTIVITY FOR GINSENOSIDE BY MALDI-TOF AND PURIFICATION OF THE GLUCOSIDASE**

Eun-Mi Kim, Chang-Soo Lee, Byung-Gee Kim
Seoul National University, Korea

28. **CONFORMATIONAL TRANSITION OF ENZYMES IN THE PRESENCE OF AN ORGANIC SOLVENT**

Hiroyasu Ogino
Osaka Prefecture University, Japan

29. **CHARACTERIZATION OF A NOVEL COLD-ADAPTED LIPASE FROM METAGENOMIC RESOURCES OF DEEP SEA SEDIMENTS**

Jeong Ho Jeon, J. K. Lim, S. S. Bae, S. H. Yang, H. S. Lee, S. K.. Kang, S. J. Kim and J. H. Lee
Marine Biotechnology Center., Korea Ocean Research & Development Institute, Korea

30. **CHARACTERIZATION OF A THERMOSTABLE DNA POLYMERASE FROM THERMOCOCCUS SP. NA1: APPLICATION IN PCR**

Yun-Jae Kim, J. H. Jeon, S. S. Bae, H. S. Lee, S. G. Kang, S.-J. Kim, and J. H. Lee
Marine Biotechnology Center, Korea Ocean Research & Development Institute, Korea

31. **CLONING AND CHARACTERIZATION OF A THERMOSTABLE DNA LIGASE GENE FROM A HYPERTHERMOPHILE, THERMOCOCCUS SP. NA1**

Yun-Jae Kim, J. K. Lim, S. S. Bae, S. H. Yang, H. S. Lee, S. G. Kang, S.-J. Kim, and J. H. Lee
Marine Biotechnology Center, Korea Ocean Research & Development Institute, Korea

32. **CHARACTERIZATION OF PEPTIDASES FROM THE HYPERTHERMOPHILIC ARCHAEON THERMOCOCCUS SP. NA1**

Hyun Sook Lee, J. K. Lim, Y. J. Kim, J. H. Jeon, S. G. Kang, S.-J. Kim, J. H. Lee
Korea Ocean Research & Development Institute, Korea

33. **CLUSTER SCREENING: A NEW PIONEERING TOOL FOR ENZYME ENGINEERING**

Thomas Greiner-Stoeffele
Junior research group 'Protein Engineering', Germany

34. **SCREENING, CLONING AND CHARACTERIZATION OF ENANTIOSELECTIVE EPOXIDE HYDROLASE FROM A MARINE BACTERIA**

Young-Ok Hwang, Jung-Hee Woo, Sung Gyun Kang, Sang Jin Kim, Myong Soo Han
Korea Ocean Research & Development Institute, Hanyang University, Korea

35. **CONVERTING DNA METHYLTRANSFERASES TO ALKYLTRANSFERASES VIA COFACTOR ENGINEERING**

Saulius Klimasauskas, G. Lukinavicius, C. Dalhoff, E. Weinhold
Institute of Biotechnology, Lithuania

36. **SCREENING, EXPRESSION AND CHARACTERIZATION OF OFLOXACIN ESTER-ENANTIOSELECTIVE LIPASE FROM THE YEAST YARROWIA LIPOLYTICA 180**

Jun-Tae Kim, Hae Jeom Seo, Jung-Hee Woo, Sung Gyun Kang, Jung Hyun Lee, Sang-Jin Kim, Byeong Chul Jeong
Korea Ocean Research and Development Institute, Korea

37. **CHARACTERIZATION OF NEW FLAVONOIDS O-METHYLATRANSFERASE CLONED FROM STREPTOMYCES AVERMITILIS**

Youngdae Yoon, Yong-sub Yi, Younghee Park, Youngshim Lee, Joonghoon Ahn, and Yoongho Lim
Bio/Molecular Informatics Center, Konkuk University, Korea

38. **DELETION MUTANTS STUDIES OF O-METHYLTRANSFERASE CLONED FROM STREPTOMYCES AVERMITILIS USING MOLECULAR MODELING AND NMR SPECTROMETRY**

Youngdae Yoon, Yong-sub Yi, Youngshim Lee, Younghee Park, Joonghoon Ahn, and Yoongho Lim
Bio/Molecular Informatics Center, Konkuk University, Korea

39. **ROLE OF THE N-TERMINUS IN STABILITY AND ACTIVITY FOR THE ESTERASE/ACYLPEPTIDE HYDROLASE FROM THE ARCHAEON AEROPERUM PERNIX K1**

Yan Feng, Zuoming Zhang, Baisong Zheng, Yanping Wang, Yiqian Chen
Jilin University, China

40. **INNOVATIVE SCREENING-BASED DIRECTED EVOLUTION OF INDUSTRIAL ENZYMES**

Eui-Joong Kim, Heung-Chae Jung, Taek-Ho Yang, Hyun-Jung Lee, Jae-Gu Pan
National Research Laboratory for Microbial Display, GenoFocus Inc., Korea

41. **HIGH-THROUGHPUT CELL-BASED SCREENING OF FUNCTIONAL LIPASE VARIANTS USING BACTERIAL CELL SURFACE DISPLAY**

Taek-Ho Yang, Eui-Joong Kim, Heung-Chae Jung, Jae Gu Pan, Joon-Shick Rhee
National Research Laboratory for Microbial Display, GenoFocus Inc., Korea

42. **NOVEL A/OXOG DNA GLYCOSYLASE FROM EXTREME THERMOPHILE *THERMUS THERMOPHILUS* CAN REMOVE THYMINE FROM T/OXOG**

Jung Ho Back, Jong Hwa Park, Ji Hyung Chung, Young In Park, John A. Tainer, Ye Sun Han
Konkuk University, Korea

43. **REGIOSPECIFIC MULTIPLE METHYLATION OF QUERCETIN USING O-METHYLTRANSFERASES AND GLYCOSYLTRANSFERASE FROM PLANTS AND MICROBE**

Bong-Gyu Kim, Kwang-Hee Shin, Yoongho Lim, Joong-Hoon Ahn
Bio/Molecular Informatics Center, Department of Molecular Biotechnology, KonKuk University, Korea

44. **CHARACTERIZATION OF A O-METHYLTRANSFERASE**

Bong Gyu, Kim, Lee Yukyung, Lee Young Shim, Lim Yoongho, Ahn Joong-Hoon
Department of Molecular Biotechnology, Bio/Molecular Informatics Center, Konkuk University, Korea

45. **FEMTO-LITTER COMPARTMENT IN LIPOSOMES FOR DIRECTED EVOLUTION OF PROTEINS**

Tomoaki Matsuura, Takeshi Sunami, Kanetomo Sato, Tetsuya Yomo, Itaru Urabe
Osaka University/ PRESTO-JST, Japan

46. **CONSTRUCTION AND UTILIZATION OF PROMOTER/OPERON-TRAP VECTOR SYSTEMS FOR SCREENING OF ENVIRONMENTAL METAGENOME LIBRARY**

Won-Ho Kim, Jin-Young Lee, Su-Jin Lee, Byung-Ki Hur, Geun-Joong Kim
Institute of Biotechnological Industry,College of Engineering, Inha University, Korea

47. **DEVELOPMENT OF A STABLE LIQUID ENZYME SYSTEM FOR BROILERS ON CORN-SOYBEAN DIET**

Yong Fui Fong, Allan Lim, Tan Hai Meng
Kemin Industries (Asia) Pte Ltd, Singapore

48. **GLYCAN ANALYSIS OF RECOMBINANT ERITHROPOIETIN PRODUCED BY GLYCOSYLTRANSFERASE-ENGINEERED CHINES HAMSTER OVARY CELLS**

Jung-Hoe Kim, Hye-Rim Lim, One Choi, Yeon-Tae Jeong, Young-Dok Son
Korea Advanced Institute of Science and Technology, Korea

49. **MUTATION CONVERTING ALPHA-XYLOSIDASE INTO ALPHA-GLUCOSIDASE**

Masayuki OKUYAMA, Akira KANEKO, Haruhide MORI, Seiya CHIBA, Atsuo KIMURA
Graduate School of Agriculture, Hokkaido University, Japan

50. **A SET OF HIGH-THROUGHPUT SCREENING VECTORS DEPENDENT ON UV-INDUCIBLE AND HEAT-INDUCIBLE CELL LYSIS**

Shuang Li, Lihua Xu, Zhanglin Lin
Department of Chemical Engineering, Tsinghua University, China

51. **IMPROVING THE BIOCATALYTIC PROPERTIES OF A HALOHYDRIN DEHALOGENASE BY STRUCTURE-INSPIRED RANDOM MUTAGENESIS**

Lixia Tang, Ghannia Hasnaoui, Dick B. Janssen

Laboratory of Biochemistry, Groningen Biomolecular Sciences and Biotechnology Institute, University of Groningen, Netherlands

52. **EXPRESSION AND CHARACTERIZATION OF THERMOSTABLE ENZYME FROM *THERMUS CALDOPHILUS* GK24 IN YEAST**

Jae Youl Choi, Jung Oh Ahn, Hong Weon Lee, Hyun-Jae Shin

Enzbank, Inc., Korea

53. **RAPID SCREENING METHOD OF ALKALOPHILLIC BACTERIA-PRODUCING CYCLODEXTRIN GLYCOSYLTRANSFERASE (CGTASE)**

Suraini Abd-Aziz, Sauvaphap a/p Ai Noi, Kamarulzaman Kamaruddin, Osman Hassan

Universiti Putra, Malaysia

54. **PURIFICATION AND PROPERTIES OF LIPASES/ESTERASES FROM A BACILLUS STRAIN FOR ENANTIOSELECTIVE RESOLUTION OF (S)-KETOPROFEN**

Jinhong Zhang, Rong Guan, Zhilei Tan, Zhibo Hou, Yaoting Yu

Institute of Molecular Biology, Nankai University, China

55. **CREATION OF A NOVEL ENZYME USING THE YEAST CELL SURFACE DISPLAY SYSTEM OF ANTIBODY**

Michiko Kato, Norihiko Okochi, Seizaburo Shiraga, Mitsuyoshi Ueda

Division of Applied Life Sciences, Graduate School of Agriculture, Kyoto University, Japan

Poster Session B

1. **MUTS-BASED BIOCHIPS FOR DETECTION OF DNA MUTATIONS**

Lijun Bi, Xian'en Zhang, Yafeng Zhou
Institute of Biophysics, Chinese Academy of Sciences, China

2. **BIOELECTROCHEMICAL DENITRIFICATION USING PERMEABILIZED WHOLE CELL**

Young Je Yoo, Yang Hee Kim, Seung Hoon Song
School of Chemical and Biological Engineering, Seoul National University, Korea

3. **A NEW ENZYME CHIP FOR MICROQUANTIFICATION OF L-PHENYLALANINE**

Shinjiro TACHIBANA, Masayasu SUZUKI, Yasuhisa ASANO
Biotechnology Research Center, Toyama Prefectural University, Japan

4. **CROSS-LINKED ENZYME AGGREGATES IN BIMODAL MESOPOROUS SILICA: A SIMPLE AND EFFECTIVE METHOD FOR ENZYME STABILIZATION**

Moon Il Kim, Jungbae Kim, Jinwoo Lee, Hyun Gyu Park, Ho Nam Chang
KAIST, Korea

5. **PROTEINASES AND PROTEOLYTIC HYDROLYSATES FROM INVERTEBRATES OF NORTHERN SEAS**

Mukhin V.A., V. Yu. Novikov
Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), Russia

6. **TUMOR-TARGETING BACTERIA COMBINED WITH ANGIOGENESIS INHIBITOR ENDOSTATIN ENHANCED THERAPEUTIC EFFECT IN MELANOMA MODEL**

Zi-Chun Hua, Li-Jun Jia, Han-Mei Xu, Ding-Yuan Ma, Qin-Gang Hu, Xiao-Feng Huang, Wen-Hui JiangShu, Feng Li, Kun-Zhi Jia, Qi-Lai Huang
Nanjing University, China

7. **POLYMERIZATION OF CARDANOL USING PEROXIDASE AND ITS POTENTIAL APPLICATION AS NEW COATING MATERIAL**

Yong Hwan Kim, Eun Suk An, Keehoon Won, Jae Kwang Song, Bong Keun Song
Dept. of Chemical Engineering, Kwangwoon University, Korea

8. **ENZYME ENGINEERING FOR SEMI-SYNTHETIC BETA-LACTAM ANTIBIOTICS INDUSTRY IN CHINA**

Sheng YANG, Zhongyi YUAN, Yunliu YANG, Weihong JIANG

Institute of Plant Physiology & Ecology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, China

9. **MOLECULAR CHARACTERIZATION OF MEMBRANE TYPE AND GANGLIOSIDE-SPECIFIC SIALIDASE (NEU3) EXPRESSED IN E. COLI**

Un-Ho Jin, Young-Choon Lee, Cheorl-Ho Kim

College of Oriental Medicine, Dongguk University, Korea

10. **VIVACTIS' MIDICALTM TECHNOLOGY PLATFORM, A MULTI-WELL MICROPLATE EXPERT SYSTEM FOR RANK-LISTING ENZYMES**

Katarina Verhaegen, Roeland Papen

Roeland Papen, Vivactis, Belgium

11. **NOVEL HYDROGENASES FROM SULPHATE REDUCING BACTERIA (SRB): DECOLOURISATION OF INDUSTRIAL WASTEWATER EFFLUENTS**

C.G. Whiteley

Rhodes University, South Africa

12. **A LOW INVASIVE GENE EXPRESSION METHOD TO THE HUMAN CELLS USING NA NONEEDLE**

SungWoong Han, Chikashi Nakamura, Ikuo Obataya, Rika Fujita, Yosuke Imai, Noriyuki Nakamura, Jun Miyake, Teruyuki Nagamune

Tokyo University of Agriculture and Technology (TUAT), Japan

13. **EFFECT OF COMPOUNDS RELEASED DURING WET OXIDATION OF WHEAT STRAW ON ENZYMATIC HYDROLYSIS RATES**

Gianni Panagiotou, Lisbeth Olsson

Center for Microbial Biotechnology, BioCentrum-DTU, Technical University of Denmark, Denmark

14. **PRODUCTION OF ELECTROPHORETIC-GRADE AGAROSE FROM AGAR BY RECOMBINANT ARYLSULFATASE**

Soo-Wan Nam, Yhon-Hwa Jang

Dept. Biotechnology and Bioengineering, Dong-Eui University, Korea

15. **BIOCATALYSIS IN IONIC LIQUIDS: INFLUENCE OF PHYSICOCHEMICAL PROPERTIES OF IONIC LIQUIDS ON THE CATALYTIC ACTIVITY AND ENANTIOSELECTIVITY OF THE ENZYME**

Sang Hyun Lee, Sun Bok Lee

Pohang University of Science and Technology, Korea

16. **ENZYMATIC HYDROLYSIS OF INULIN BY CELL-SURFACE ENGINEERED *SACCHAROMYCES CEREVISIAE* STRAIN**

Hyun-Chul Kim, Hyun-Jin Kim, Soo-Wan Nam

Dept. of Biotechnology and Bioengineering, Dong-Eui University, Korea

17. **VIRTUAL ENZYME SCREENING SYSTEM USING SEQUENCE PROFILE ANALYSIS AND STRUCTURE-ACTIVITY RELATIONSHIP**

Joo-Hyun Seo[1], Hyung-Yeon Park[2], Jihyang Park[1], Bon-Su Lee[2] and Byung-Gee Kim[1]

[1]School of Chemical and Biological Engineering, Seoul National University, Seould, KOREA

[2]Department of Chemistry, Inha University, Incheon, KOREA

18. **PREPARATION OF (R)-2-CHLOROMANDELIC ACID ESTERS BY CANDIDA ANTARCTICA LIPASE A**

Sang-Joon Lee, Ki-Nam Uhm, Sang Chul Lim, Ji-Yeon Yu, Han-Young Kang, Younghoon Lee

Department of Chemistry and Center for Molecular Design and Synthesis, Korea Advanced Institute of Science and Technology, Korea

19. **AN ENZYMATIC STRATEGY FOR SITE-SPECIFIC AND COVALENT PROTEIN IMMOBILIZATION**

Noriho Kamiya, Jo Tominaga, Satoshi Doi, Hirofumi Ichinose, Masahiro Goto

Kyushu University, Japan

20. **NATURAL AND EDIBLE BIOPOLYMER POLY-GAMMA-GLUTAMIC ACID: PRODUCTION AND INDUSTRIAL APPLICATIONS**

Chung Park, Haryoung Poo, Makoto Ashiuchi, Kenji Soda, Moon-Hee Sung

BioLeaders Corporation, Korea

21. **POLY-GAMMA-GLUTAMIC ACID-VITAMIN C CONJUGATE: SYNTHESIS AND INDUSTRIAL APPLICATION**

Moon-Hee Sung, Chung Park, Jae-Jun Song, Seok-Chan Kim, Hiroshi Uyama
Department of Bio & Nanochemistry, Kookmin University, Korea

22. **OPTIMIZATION FOR HETEROLOGOUS PROTEIN DISPLAY IN LACTIC ACID BACTERIA**

Jong-Soo Lee, Il-Han Lee, Kwang Kim, Seung-Pyo Hong, Haryoung Poo, Chul-Joong Kim, Moon-Hee Sung
BioLeaders Corporation, Daejeon, Korea, Korea

23. **DEVELOPMENT OF EXPRESSION SYSTEM FOR HETEROLOGOUS PROTEIN SECRETION IN LACTIC ACID BACTERIA**

Il-Han Lee, Jong-Soo Lee, Ji-Youn Kim, Mi-Suk Lee, Seung-Pyo Hong, Akihiko Kondo, Chul-Joong Kim, Moon-Hee Sung
BioLeaders Corporation, Daejeon, Korea, Korea

24. **UPGRADING OF PAPER-FIBERS AND REFINING PROCESS BY USING ENZYME**

Typuk Artiningsih, Ryuichiro KONDO
R&D Center in Biology, Indonesian Institute of Sciences, Indonesia

25. **MESOCELLULAR CARBON FOAM WITH A BIMODAL STRUCTURE AND ITS USE FOR ENZYME IMMOBILIZATION**

Dohoon Lee, Hak-Sung Kim, Jinwoo Lee, Jaeyun Kim, Hyon Bin Na, Taeghwan Hyeon, Jungbae Kim, Ja Hun Kwak, Alice Dohnalkova, Jay W. Grate, Chae-Ho Shin
Department of Biological Sciences, Korea Advanced Institute of Science and Technology, Korea

26. **PRODUCTION OF GRANULAR STARCH HYDROLYSING ENZYMES FOR LOW ENERGY GRAIN ETHANOL PRODUCTION**

Nigel Dunn-Coleman, Tim Dodge, Jayarama Shetty, OJ Lantero, Jim Myers, Bradley Keleman
Genencor International, USA

27. **SYNTHESIS OF PREBIOTIC GALACTO-OLIGOSACCHARIDES BY NOVEL BETA-GALACTOSIDASES OF LACTOBACILLUS SPP.**

Barbara Splechtna, Thu-Ha Nguyen, Klaus D. Kulbe, Dietmar Haltrich
Applied Biocatalysis Research Centre, Austria

28. **IMMOBILIZATION OF ß-GALACTOSIDASE FROM LACTOBACILLUS SP. ON CHITOSAN AND EUPERGIT C**

Thu-Ha Nguyen, Barbara Splechtna, Klaus D. Kulbe, Dietmar Haltrich
Applied Biocatalysis Research Centre, Austria

29. **SURFACE DISPLAY OF HEME- AND FLAVIN-CONTAINING OXIDOREDUCTASES IN ESCHERICHIA COLI: WHOLE CELL BIOCATALYSTS FOR OXIDATION AND REDUCTION**

Chul-Ho Yun, Sung-Kun Yim, Heung-Chae Jung, Jae-Gu Pan, Hyung-Sik Kang, Taeho Ahn
School of Biolgical Sciences and Technology and Hormone Research Center, Chonnam National University, Korea

30. **SELECTIVE ENZYMATIC ALCOHOLYSIS OF VEGETABLE OILS**

Cristina Otero, Estela Hernßndez-Martf n
Institute of Catalysis and Petroleochemistry. CSIC, Spain

31. **ENZYMATIC PREPARATION OF BIODIESEL OILS FROM DIFFERENT FEEDSTOCKS**

Cristina Otero, Estela Hernßndez-Martf n
Institute of Catalysis and Petroleochemistry. CSIC, Spain

32. **BIOSYNTHESIS OF DEOXYNUCLEOSIDE TRIPHOSPHATES (DNTP): REACTION MECHANISM AND KINETICS**

Jie Bao, Dewey D. Y. Ryu
Biochemical Engineering Program, University of California, USA

33. **MICROBIAL PRODUCTION OF CHIRAL BETA-AMINO ACIDS THROUGH ENANTIOSELECTIVE ESTER HYDROLYSIS**

Jun Ogawa, Junichi Mano, Sakayu Shimizu
Division of Applied Life Sciences, Graduate School of Agriculture, Kyoto University, Japan

34. **RAPID ESTIMATION OF THE ENANTIOSELECTIVITY IN LIPASE-CATALYZED RESOLUTION OF GLYCIDYL BUTYRATE USING PH INDICATORS**

Wang Zhi, Yu Da-hai, Cao Shu-gui
Key laboratory for molecular enzymology and engineering of educational ministry, Jilin University, China

35. **ENZYMATIC SYNTHESIS OF CHIRAL AMINODIOLS USING OMEGA-TRANSAMINASES**

U. Kaulmann, M.E.B. Smith, C.U. Ingram, M. Bommer and J.M. Ward

University College London, Dep. of Molecular Biology & Biochemistry, United Kingdom

36. **CARBONYL REDUCTASE FROM CANDIDA MACEDONIENSIS: GENE CLONING, AND APPLICATION TO THE BIOREDUCTION SYSTEM**

Michihiko Kataoka, Akiko Hoshino, Rungruedee Thiwthong, Nanami Higuchi, Takeru Ishige, Sakayu Shimizu

Division of Applied Life Sciences, Graduate School of Agriculture, Kyoto University, Japan

37. **SURFACTANT AND ANTIMICROBIAL PROPERTIES OF SUGAR ALCOHOL-FATTY ACID ESTERS SYNTHESIZED THROUGH LIPASE-CATALYZED CONDENSATION IN ACETONE**

Shuji Adachi, Junkui Piao

Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, Japan

38. **PRODUCTION OF (S)-STYRENE OXIDE USING STYRENE OXIDE ISOMERASE NEGATIVE MUTANT OF PSEUDOMONAS PUTIDA SN1**

Sunghoon Park, Ju Hee Han, Mi So Park, Sun Gu Lee

Pusan National University, Korea

39. **A NEW PATHWAY FOR THE SYNTHESIS OF OLIGOSACCHARIDES BY GLYCOSYLTRANSFERASES**

Klaus Buchholz

Technical University, Germany

40. **IN VIVO SYNTHESIS OF GDP-L-FUCOSE FROM ENDOGENOUS GDP-D-MANNOSE IN *PICHIA PASTORIS***

Kyoung-Soon, Jang, Jeong-Eun Lim, Byung-Gee Kim, Peng George Wang

School of Chemical and Biological Engineering, Seoul National University, Korea

41. **SCALE-UP OF ENZYMATIC RAPE OIL-DEGUMMING PROCESS USING RESPONSE SURFACE METHOD**

Ji-guo YANG, Bo YANG, Yong GUO

College of Bioscience and Biotechnology, South China University of Technology, China

42. **DEVELOPMENT OF NOVEL BIOCATALYSIS USING EUTECTIC SUBSTRATE MIXTURES**

Chul Soo Shin, Hyun Jung Kim, Sung Hun Youn
Department of Biotechnology, Yonsei University, Korea

43. **SYNTHESIS OF L-ASCORBIC ACID BY A MULTI-STEP ENZYME-CATALYSED PROCESS USING OXIDOREDUCTASES WITH DIFFERENT REQUIREMENTS FOR COFACTOR REGENERATION**

Klaus Dieter Kulbe, Harald Friessnegg, Dietmar Haltrich, Markus Jeschofnik, Christian Leitner and Lavdrim Nasufi
BOKU-University of Natural Resources and Life Sciences, Vienna, Department of Food Science and Technology, Division of Food Biotechnology, Austria

44. **BIOSYNTHESIS OF (2R)-4-AMINO-2-HYDROXYBUTYRIC ACID BY BUTIROSIN-BIOSYNTHETIC GENE CLUSTER ANALYSIS**

Hwa-Jin Lee, Byung-Gee Kim, Mai Lam , Jae-Kyung Sohng, Hee-Chan Lee, Kwang-kyung Liou
Interdisciplinary Program for Biochemical engineering and Biotechnology, Graduate School, Seoul National University, Korea

45. **STEREOSPECIFIC SYNTHESIS OF (S)-2-HYDROXY CARBOXYLIC ACIDS USING RECOMBINANT ESCHERICHIA.COLI BL21 OVER-EXPRESSING AHADH GENE FROM ENTEROBACTER. SP BK2K AND FORMATE DEHYDROGENASE FROM *ESCHERICHIA.COLI* K12**

Min-Ho Cha, Eun-Jung Kim, Byung-kwan Cho, Hyungdon Yun, Byung-Gee Kim
School of Chemical Engineering, Seoul National University, Korea

46. **LABEL-FREE PROTEIN CHIPS BASED ON LOCALIZED PLASMON RESONANCE**

Eiichi Tamiya
Japan Advanced Institute of Science and Technology, Japan

47. **LIPASED-CATALYZED PRODUCTION OF ENANTIOPURE (S)-FLURBIPROFEN IN AQUEOUS PHASE REACTION SYSTEM INDUCED BY CHIRAL SUCCINYL BETA-CYCLODEXTRIN**

Kwang-Woo Lee, Gab-Sang Shin, Tae-Kwon Kim , Hyun-Dong Shin, Yong-Hyun Lee
Department of Genetic Engineering, College of Natural Sciences, Kyungpook National University, Korea

48. **DYNAMIC KINETIC RESOLUTION BY ENZYME-METAL COMBINATION**

Kiwon Han, Yoon Kyung Choi, Jaiwook Park, Mahn-Joo Kim
Pohang University of Science and Technology, Korea

49. **A NOVEL YEAST ALCOHOL DEHYDROGENASE FOR THE SYNTHESIS OF OPTICALLY ACTIVE COMPOUNDS**

Makoto Ueda, Shigeru Kawano, Miho Horikawa, Naoaki Taoka, Yoshihiko Yasohara, Junzo Hasegawa
Fine Chemicals Research Laboratories, Fine Chemicals Division, Kaneka Corporation, Japan

50. **THE STUDY OF ?-GAL EPITOPES AND OTHER CARBOHYDRATE ANTIGENS IN XENOTRANSPLANTATION**

Kyoung-Soon Jang[1*], Yun-Gon Kim[1], Woo-Jae Chng2, Sun-Young Kim[2], Hyun-Ki Kim[1], Yoon-Sik Lee[2] and Byung-Gee Kim[1,2]
1Interdiciplinary Program for Biochemical Engineering and Biotechnology, Seoul National University, Seoul, Korea; [2]School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea

51. **COEXPRESSION OF PROTEIN DISULFIDE ISOMERASE (PDI) ENHANCED PRODUCTION OF KRINGLE FRAGMENT OF HUMAN APOLIPOPROTEIN(A) IN RECOMBINANT SACCHAROMYCES CEREVISIAE**

Tae-Hee Lee, Kwang-Hyun Cha, Myoung-Dong Kim, Lee-Hyun Bae, Hyung-Kweon Lim, Kyung-Hwan Jung, Jin-Ho Seo
Department of Agricultural Biotechnology and Center for Agricultural Biotechnology, Seoul National University, Korea

52. **PRODUCTION OF OMEGA -3 TRIGLYCERIDE CONCENTRATES USING ENZYMATIC ESTERIFICATION OR TRANSESTERIFICATION**

Jari Kralovec, Weijie Wang, Colin Barrow, Yvette Mullen, Michael Potvin
Ocean Nutrition Canada, Canada

53. **LIPASE-MEDIATED ACIDOLYSIS OF MENHADEN OIL WITH PINOLENIC ACID**

Charles G. Hill, Jr., In-Hwan Kim, Hugo S. Garcia, Cristina Otero, Arnoldo Lopez-Hernandez
University of Wisconsin, USA

54. **LINKER-ENGINEERING AND STRUCTURAL RELEVANCE OF SUGAR-SENSITIVE FRET BIOSENSOR**

Seung-Goo Lee, Jae Joon Song, Jae-Seok Ha, Young-Mi Lee, Chul-Soo Shin, Kyung-Jin Kim
Korea Research Institute of Bioscience and Biotechnolgy (KRIBB), Korea

55. **D-PHENYLGLYCINE AMINOTRANSFERASE MOLECULAR ENGINEERING, IMMOBILIZATION, AND DEVELOPMENT OF AN ENZYMATIC PROCESS FOR D-PHENYLGLYCINE SYNTHESIS**

Theerasak Rojanarata, Duangnate Isarangkul, Suthep Wiyakrutta, John M. Woodley, Vithaya Meevootisom

Department of Microbiology, Faculty of Science, Mahidol University, Rama VI Rd., Bangkok, 10400, Thailand , Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Silpakorn University, Thailand