P1: DRUG, PROTEIN AND GENE DELIVERY SYSTEMS

P1-1 PolymerDrugs and Related Polymers from Bioactives
Kathryn E. Uhrich, R. Rosario, Sabrina Engler and Michelle Ouimet
Rutgers University, USA

P1-2 Thermo-Responsive Poly(carbonate) for Drug Delivery
Jeremy P. K. Tan[1], Sung Ho Kim[2], Kazuki Fukushima[2], Fredrik Nederberg[2], Yiyan Yang[1], Robert Waymouth[3] and James L. Hedrick[2]
[1]Institute of Bioengineering and Nanotechnology, Singapore, [2]IBM Almaden Research Center, USA, and [3]Stanford University, USA

P1-3 Synthesis and Characterization of Novel Functional Poly(carbonates) for Delivery of Anti-Cancer Drugs
Chuan Yang[1], Yi Ting Tan[1], James L. Hedrick[2] and Yiyan Yang[1]
[1]Institute of Bioengineering and Nanotechnology, Singapore, and [2]IBM Almaden Research Center, USA

P1-4 Mannose-Bearing Poly(carbonate) Micelles for the Targeting of Dendritic Cells
Lin Kin Yong[1], Jeremy P. K. Tan[1], Fabian Suriano[2], Philippe Dubois[2], James L. Hedrick[3] and Yiyan Yang[1]
[1]Institute of Bioengineering and Nanotechnology, Singapore, [2]University of Mons, Belgium, and [3]IBM Almaden Research Center, USA

P1-5 Rational Design of Biodegradable Cationic Poly(carbonate) as a Gene Delivery Carrier
Zhan Yuin Ong[1,2], Kazuki Fukushima[3], Pui Lai Rachel Ee[2], Yiyan Yang[1] and James L. Hedrick[3]
[1]Institute of Bioengineering and Nanotechnology, Singapore, [2]National University of Singapore, Singapore, and [3]IBM Almaden Research Center, USA

P1-6 Enhanced Micelle Stability Through Mixed Micelles
Wei Cheng[1], Chuan Yang[1], Jeremy P. K. Tan[1], Amalina bte Ebrahim Attia[1], James L. Hedrick[2] and Yiyan Yang[1]
[1]Institute of Bioengineering and Nanotechnology, Singapore, and [2]IBM Almaden Research Center, USA

P1-7 Co-Delivery of Paclitaxel and Herceptin Using Cationic Micellar Nanoparticles: Achieving Enhanced Cytotoxicity and Targeting
Ashlynn Lee[1], Yong Wang[1], Han Yin Cheng[1], Shazib Pervaiz[2] and Yiyan Yang[1]
[1]Institute of Bioengineering and Nanotechnology, Singapore, and [2]National University of Singapore, Singapore

P1-8 All Trans Retinoic Acid Loaded Di- and Tri-Block Copolymer Nanoparticles Efficiently Induce Cellular Differentiation in HL-60 Cells
Manu Tiwari, Sarika Mehra, Sameer Jadhav and Jayesh Bellare
Indian Institute of Technology Bombay, India

P1-9 Cell Uptake of Cross-Linked Mucoadhesive Cationic Hydrogel Nanoparticles and Their Interactions with Macrophage Cell Line
Isha Mutreja[1], Madhu[1], A. K. Dinda[2] and Susmita Mitra[1]
[1]Amity University, India, and [2]All India Institute of Medical Sciences, India

P1-10 Non-Viral Vector for Efficient Delivery of Nucleic Acid by the Oral Route
Madhu[1], A. K.Dinda[2] and Susmita Mitra[1]
[1]Amity University, India, and [2]All India Institute of Medical Sciences, India

P1-11 Evaluation of Chitosan-Based Nanocomposite Mediated Enzyme and Gene Delivery Systems to Introduce Prodrug Activating Enzymes into Cancer Cells
Vinod Kumar Yata and Siddhartha Sankar Ghosh
Indian Institute of Technology Guwahati, India

P1-12 Enhanced Antitumor Activity of a Polymer-Lytic Peptide Conjugate of Multivalent Design: Synthesis, Characterization and Mechanism Exploration
Jieying Zhong and Ying Chau
Hong Kong University of Science and Technology, Hong Kong

P1-13 A Polymer-Lytic Peptide Conjugate Sensitive to Tumor-Associated Protease
Jieying Zhong and Ying Chau
Hong Kong University of Science and Technology, Hong Kong

P1-14 Engineered Lipid Drug Conjugate Nanoparticles for Improved Oral Delivery of Methotrexate
Rishi Paliwal and Suresh P. Vyas
Dr. H. S. Gour University, India

P1-15 Hemoglobin Vesicles, Artificial Red Cells, as O_2 and CO Carriers for Cytoprotection
Hiromi Sakai[1], Hirohisa Horinouchi[2], Koichi Kobayashi[2] and Eishun Tsuchida[3]
[1]Waseda Bioscience Research Institute, Singapore, [2]Keio University, Japan, and [3]Waseda University, Japan

P1-16 Bioengineered pH-Sensitive Nanocarriers for Site-Specific Delivery of Doxorubicin for Breast Cancer Therapy
Shivani Rai and Suresh P. Vyas
Dr. H. S. Gour University, India

P1-17 A Nanodiamond Drug Delivery Platform for Enhanced *In Vivo* Treatment of Chemoresistant Tumors
Edward K. Chow[1], Xueqing Zhang[2], Mark Chen[2], Robert Lam[2], Erik Robinson[2], Houjin Huang[2], Eiji Osawa[3], Andrei Goga[1], J. Michael Bishop[1] and Dean Ho[1,2]
[1]University of California, San Francisco, USA, [2]Northwestern University, USA, and [3]Shinshu University, Japan

P1-18 Inclusion and Release Study of Hydrophobic Drug Using Carboxymethyl-β-Cyclodextrin Functionalized Fe_3O_4/APTS Core-Shell Nanoparticles
Abu Zayed M. Badruddoza, K. Hidajat and M. S. Uddin
National University of Singapore, Singapore

P1-19 Baculovirus-Transduced Bone Marrow Mesenchymal Stem Cells for Systemic Cancer Therapy
Xiao Ying Bak[1], Jingye Yang[1,2] and Shu Wang[1,2]
[1]Institute of Bioengineering and Nanotechnology, Singapore, and [2]National University of Singapore, Singapore

P1-20 Human NT2 Neural Precursor-Derived Tumor-Infiltrating Cells as Delivery Vehicles for the Treatment of Glioblastoma
Ying Zhao[1] and Shu Wang[1,2]
[1]Institute of Bioengineering and Nanotechnology, Singapore, and [2]National University of Singapore, Singapore

P2: PHARMACEUTICALS SYNTHESIS AND GREEN CHEMISTRY

P2-1 Transesterification of Sunflower Oil in Countercurrent Trickle-Bed Reactor Packed with CaO Catalyst
Katsuki Kusakabe, Sung Mo Son, Hiroko Kimura and Norihiro Ikeda
Fukuoka Women's University, Japan

P2-2 *In Silico* Analysis to Explore the Effect of Carbon Sources Selection on Ethanologenic Activity in *Zymomonas Mobilis*
Hanifah Widiastuti[1], Hae Young Kim[2], Suresh Selvarasu[3], Iftekhar A. Karimi[1], Hyungtae Kim[2], Jeong-Sun Seo[2] and Dong-Yup Lee[1,3]
[1]National University of Singapore, Singapore, [2]Macrogen Inc., Korea, and [3]Bioprocessing Technology Institute, Singapore

P2-3 Emerging Sustainability Issues in Nano-Manufacturing – A Sustainability Assessment of CNT-Reinforced Solders
Qizhen Yang, S. M. L. Nai and B. Song
Singapore Institute of Manufacturing Technology, Singapore

P3: BIODEVICES AND BIOSENSORS

P3-1 Wide-Range and Scalable Wettability Gradient on Polypropylene Membrane
Dave Mangindaan and Meng-Jiy Wang
National Taiwan University of Science and Technology, Taiwan

P3-2 A Novel Molecular Diagnostic of Chronic Myeloid Leukemia by Magnetic Nanoparticles
Yuranun Distarot[1], Duangporn Polpanich[2], Vichanan Yamkamon[1], Jutharat Peng-On[1], Raweewan Thiramanas[2], Pramuan Tangboriboonrat[1] and Kulachart Jangpatarapongsa[1]
[1]Mahidol University, Thailand, and [2]National Nanotechnology Center, Thailand

TUESDAY, 3 AUGUST 2010, 4:15PM TO 5:15PM
POSTER SESSION II

P4: NANOPARTICLES, NANOCOMPOSITES AND NANOPOROUS MATERIALS FOR BIO-APPLICATIONS

P4-1 Droplet-Based Microfluidic Synthesis of Gold Nanorods and Nanospheres
Suhanya Duraiswamy[1] and Saif A. Khan[1,2]
[1]National University of Singapore, Singapore, and [2]Singapore–MIT Alliance, Singapore

P4-2 Continuous-Flow Digital Gold Nanoshell Synthesis in Ordered Microfluidic Composite Foams
Suhanya Duraiswamy[1] and Saif A. Khan[1,2]
[1]National University of Singapore, Singapore, and [2]Singapore–MIT Alliance, Singapore

P4-3 Mixed Ligand Shells Impart Remarkable Stability to Noble Metal Nanoparticles
Paul Free[1], Laurence Duchesne[2], Raphaël Lévy[2], Jonathan Hobley[1], He Chaobin[1] and David G. Fernig[1]
[1]Institute of Materials Research and Engineering, Singapore, and [2]University of Liverpool, UK

P4-4 Biological Synthesis of Metal Nanoparticles Using Plant Leaf Extracts
Beom Soo Kim and Jae Yong Song
Chungbuk National University, Korea

P4-5 Surface Functionalized Magnetic Nanoparticles for Separation of Chiral Biomolecules
Sudipa Ghosh, Abu Zayed Md. Badruddoza, Mohammad S. Uddin and Kus Hidajat
National University of Singapore, Singapore

P4-6 Microfluidic Protein Chromatography with Silica-Coated Magnetic Nanocluster
Su Hui Sophia Lee[1], T. Alan Hatton[1,2] and Saif A. Khan[1,3]
[1]Singapore-MIT Alliance, Singapore, [2]Massachusetts Institute of Technology, USA, and [3]National University of Singapore, Singapore

P4-7 Beta-Cyclodextrin Bonded Magnetic Nanoparticles as Solid-Phase Artificial Chaperone for Protein Refolding
Abu Zayed Md. Badruddoza, Kus Hidajat and Mohammad S. Uddin
National University of Singapore, Singapore

P4-8 Nano-Lignin Particles for Anti-Bacterial Agent by Oganosolv Method from Wood
Sungchul Hong[1], Ji-Woong Park[1], Moon-Sun Kim[2] and Byung-Woo Kim[1]
[1]Sungkyunkwan University, Korea, and [2]Bio/Nano-Fusion Material Research Center, Korea

P4-9 Particle Size Affects the Cellular Response in Macrophages
Hua Yue, Wei Wei, Zhanguo Yue, Piping Lv, Lianyan Wang, Guanghui Ma and Zhiguo Su
Institute of Process Engineering, Chinese Academy of Sciences, China

P4-10 Characterization of *In Vitro* Cell Cultures and Tissue-Like Structures Suitable for Nanotoxicology Studies
Yao Li, Yuangang Zheng, Kangyi Zhang, Jackie Y. Ying and Daniele Zink
Institute of Bioengineering and Nanotechnology, Singapore

P4-11 Study on Rhamnolipid Capped Nanoparticle Synthesis in Aqueous Condition and Its Characterization
Narayanan Janakiraman[1], Ramesh Ramji[1], Hrushikesh Sahu[2] and Pennathur Gautam[1]
[1]Anna University, India, and [2]Indira Gandhi Centre for Atomic Research, India

P4-12 Study of Articular Cartilage Injuries Using Polarized Raman Spectroscopy
Hamed Zaribafzadeh, Natalie Lim, Casey Chan and Zhiwei Huang
National University of Singapore, Singapore

P4-13 Smart Ultrashort Peptides Self-Assembled from Nanostructures to Supramolecular Scaffolds
Archana Mishra, Rensheng Deng, Yihua Loo, Furen Zhuang, Jackie Y. Ying and Charlotte A. E. Hauser
Institute of Bioengineering and Nanotechnology, Singapore

P4-14 Self-Assembly of Ultrasmall Peptides to Amyloid Aggregates
Furen Zhuang[1], Yihua Loo[1], Archana Mishra[1], Rensheng Deng[1], Angelo Accardo[2], Christian Riekel[2], Jackie Y. Ying[1] and Charlotte A. E. Hauser[1]
[1]Institute of Bioengineering and Nanotechnology, Singapore, and [2]European Synchroton Radiation Facility, France

P4-15 Saccharide and Alkyl Chain Grafted Polypeptides: Self-Assembly and Biomedical Applications
Yun-Chiao Huang, Marannu Arham and Jeng-Shiung Jan
National Cheng Kung University, Taiwan

P4-16 Spontaneous and Reversible Self-Assembly of a Polypeptide Fragment of Insulin-Like Growth Factor Binding Protein-2 into Fluorescent Nanotubular Structures
Ravula Thirupathi[1], Monalisa Swain[1], Steven A. Rosenzweig[2] and Hanudatta S. Atreya[1]
[1]Indian Institute of Science, Bangalore, India, and [2]Medical University of South Carolina, USA

P4-17 New Reagents for the Determination of Low Resolution Protein Structures
David Paramelle[1, 2], Gilles Subra[1], Michael Heymann[3], Christophe Geourjon[3], Eric Forest[4] and Jean Martinez[1]
[1]Universités Montpellier I, France, [2]Institute of Materials Research and Engineering, Singapore, [3]Institut de Biologie et de Chimie des Protéines, France, and [4]Institut de Biologie Structurale, France

P4-18 DNA as Scaffold for Porphyrin-Nanoarchitectures
Thao Nguyen Nguyen[1], Imenne Bouamaied[1], Jonathan Burns[1], David Collison[2], Ruth Edge[2], Eric McInnes[2], Joanna Wolowska[2] and Eugen Stulz[1]
[1]University of Southampton, UK, and [2]Manchester University, UK

P4-19 Hb-Vesicles as an Artificial O_2 Carrier: The Reaction Profiles with Gas Molecules (O_2, NO and CO)
Hiromi Sakai[1], Naoto Okuda[2], Shinji Takeoka[1, 2] and Eishun Tsuchida[2]
[1]Waseda Bioscience Research Institute, Singapore, and [2]Waseda University, Japan

P5: CELL AND TISSUE ENGINEERING

P5-1 Utility of Muscle-Derived Stem Cells in Overcoming Age-Related Muscle Wasting Sarcopenia
Bipasha Bose, Leong Wing Hoe Paul, Mridula Sharma and Ravi Kambadur
Nanyang Technological University, Singapore

P5-2 Nanostructured Synthetic Hydrogels as Scaffolds for Cell Delivery
Yan Li[1,2], Chuan Yang[1], Shaoqiong Liu[2], Rachel Pui Lai Ee[2], James L. Hedrick[3] and Yiyan Yang[1]
[1]Institute of Bioengineering and Nanotechnology, Singapore, [2]National University of Singapore, Singapore, and [3]IBM Almaden Research Center, USA

P5-3 Cellulosic Hydrogel Scaffold for Liver Tissue Engineering Application
Bramasta Nugraha[1,2] and Hanry Yu[1,2,3]
[1]Institute of Bioengineering and Nanotechnology, Singapore, [2]National University of Singapore, Singapore, and [3]Massachusetts Institute of Technology, USA

P5-4 Cell Patterning and Cell Alignment on Nanostructured Substrates Based on Carbon Nanotubes
Che Azurahanim Che Abdullah[1], P. Asanithi[1], E. W. Brunner[1], C. L. Azad[2], R. Ovalle Robles[2], S. Collins[2], R. H. Baughman[2], R. P. Sear[1] and A. B. Dalton[1]
[1]University of Surrey, UK, and [2]The University of Texas at Dallas, USA

P5-5 Electrospun Nanofiber Modified with Biological Ligands for Sandwich Culture of Hepatocytes
Hsiu-Wen Chien and Wei-Bor Tsai
National Taiwan University, Taiwan

P5-6 Well-Aligned PLCG Nanofibers Modified with Phospholipid Polymers and Anti-Inflammatory Agents for Tissue-Engineered Vascular Grafts
Hyung Il Kim[1,2], Eunsook Ryu[2], Ryosuke Matsuno[1], Tomohiro Konno[1], Madoka Takai[1], Jeong-Sun Seo[2] and Kazuhiko Ishihara[1]
[1]University of Tokyo, Japan, and [2]Macrogen Inc., Korea.

P5-7 Fabrication and Evaluation of Nano Hydroxyapatite-Gelatin Composite for Guided Bone Regeneration
Nitin Sagar, Amit Jaiswal, V. P. Soni and Jayesh Bellare
Indian Institute of Technology Bombay, India

P5-8 Synthesis and Characterization of Hydroxyapatite/Sodium Alginate Composite
Mani Rajkumar, N. Meenakshisundaram and V. Rajendran
K. S. Rangasamy College of Technology, India

P5-9 Effect of Porosity on Structure of PHB-HA Nanocomposite Scaffold Prepared by Solvent Casting and Particulate Leaching Method
Abbas Saadat[1], A. Behnamghader[2], S. Karbasi[3], M. Radmehr[3] and M. Sadeghi[3]
[1]Islamic Azad University, Majlesi Branch, Iran, [2]Isfahan University of Medical Science, Iran, and [3]Isfahan University of Technology, Iran

P5-10 The Development of a Bioartificial Kidney
Ming Ni, Kangyi Zhang, Mohammed Shahrudin bin Ibrahim, Farah Tasnim, Rensheng Deng, Min Hu, Sean Liour, Edwin Chow, Jackie Y. Ying and Daniele Zink
Institute of Bioengineering and Nanotechnology, Singapore

P5-11 Engineered Micro-Porosity to Tailor Mechanical Properties of Cranial Implants
Alexandros Tsouknidas[1], Stergios Maropoulos[1], Nikolaos Michailidis[2], Fani Stergioudi[2], Dimitrios Tsipas[2] and Dimitrios Stimoniaris[1]
[1]Technical University of Western Macedonia, Greece, and [2]Aristoteles University of Thessaloniki, Greece