2012 International Conference of the Korean Society of Pharmaceutical Sciences and Technology

"Global Cutting-Edge Technology in Pharmaceutical Sciences"

Plenary Lecture

- "Moving PKPD from Basic Towards Systems Pharmacology"
  William Jusko (School of Pharmacy and Pharmaceutical Sciences, State University of New York at Buffalo, USA)
- "Past, Present and Future of Pharmaceutics: From Galenus to Individualized"
  Chang-Koo Shim (College of Pharmacy, Seoul National University, Korea)

Drug Design & Development (DDD)

- "Current Development of Pharmaceutical Research and Technology in Malaysia"
  Eddy Yusuf (School of Pharmacy, Management and Science University, Malaysia)
- "Discovery and Development of an Anti-cerebral Ischemic Pro-drug, PHPB, from Chinese Medicine"
  Xiaoliang Wang (Institute of Materia Medica, Chinese Academy of Medical Sciences & Peking Union Medical College, China)
- "Current Status and Trend in Pharmaceutical Industry in Thailand"
  Sompol Prakongpan (Faculty of Pharmaceutical Sciences, Burapha University, Thailand)

Regulatory Science & Policy (RSP) KSPST-Biologics Research Division (KFDA) Joint Session

- "Overview of CTD (Common Technical Dossier) Structure"
  Jeong-Ja Oh (Synex Consulting Ltd., Korea)
- "Case Reviews for the Incrementally Modified Drugs - Focus on the Evaluation of the Safety and Efficacy"
  So-Young Wang (Korea Food and Drug Administration, Division of Cardiovascular and Neuropharmacological Drugs, Korea)
- "Prediction of Ethnic Differences using Modeling and Simulation and Impact on the Regulatory Process"
  Koji Chiba (Department of Drug Development Sciences and Clinical Evaluation, Faculty of Pharmacy, Keio University, Japan)

Biotechnology & Drug Delivery (BDD) KSPST-Biologics Research Division (KFDA) Joint Session

- "Rational Design of Polymeric Nanocarriers for Photodynamic Therapy"
  Kang Moo Huh (Department of Polymer Science and Engineering, Chungnam National University, Korea)
- "Drug Delivery Tools in Recent Pharmaceutical Preparations - Nano-crystals and Nanoparticles"
  Hirofumi Takeuchi (Laboratory of Pharmaceutical Engineering, Gifu Pharmaceutical University, Japan)
- "Active Targeted Polymeric Nanoparticles for Cancer Therapy and Imaging"
  Jong-Ho Kim (Department of Pharmaceutical Science, College of Pharmacy, Kyung Hee University, Korea)
- "Polymeric Micelle Carriers for Theranostics of Various Diseases"
  Masayuki Yokoyama (Medical Engineering Laboratory, Research Center for Medical Science, The Jikei University School of Medicine, Japan)
- "Chemical Conjugation of Heparinized Iron Oxide Nanoparticle onto Pancreatic Islets for in vivo MR Imaging"
  Dong Yun Lee (Department of Bioengineering, College of Engineering, and Institute for Bioengineering and Biopharmaceutical Research, Hanyang University, Korea)
- "Amphiphilic Derivative of Oligosaccharides-based Nanoparticles for Cancer Diagnosis and Therapy"
  Hyun-Jong Cho (College of Pharmacy, Kangwon National University, Korea)

Polymer Science & Materials (PSM)

- "Bio-inspired Design and Potential Biomedical Applications of Aptides"
  Sangyong Jon (KAIST Institute of the BioCentury, Department of Biological Sciences, KAIST, Korea)
- "Design and Synthesis of Nanostructured Biomaterials"
  Jackie Y. Ying (Institute of Bioengineering and Nanotechnology, Singapore)
- "Internalization of Drugs for Chondrogenesis of Stem Cells"
  Keun Hong Park (Department of Biomedical Science, CHA University, Korea)
- "Semi-fluorinated Block Copolymers for Delivery of Therapeutic Agent"
  Jun-Pil Jee (Center for Theragnosis, Biomedical Research Institute, Korea Institute of Science and Technology, Korea)
- "3-in-1 Silica Nanoparticles for Cancer Theranostics: From Promise to Practice"
  Leu Wei Lo (National Health Research Institutes, Taiwan)
- "Therapeutic Approaches to the Treatment of Intractable Diseases by using Multi-purpose and High Efficient Gene Therapy Agents"
  In-Kyu Park (Department of Biomedical Sciences, Chonnam National University Medical School, Korea)
- "DEC-205 Modified Thermosensitive Carrier for Specific Targeting of siRNA to Dendritic Cells"
  Jing-Hao Cui (College of Pharmaceutical Science, Soochow University, China)
- "Targeted Delivery and Therapy of Macromolecules using Pluronic-based Nanogel"
  Giyoong Tae (School of Materials Science and Engineering, Gwangju Institute of Science and Technology, Korea)
- "Electrically Conducting Nanofibrous Scaffolds for the Potential Neural Tissue Engineering Applications"
  Jae Young Lee (School of Material Science & Engineering, Gwangju Institute of Science and Technology, Korea)

Manufacturing Science & Engineering (MSE)

- "Enhanced Bioavailability of Sirolimus via Solid Dispersion Nanoparticles Prepared by Supercritical Antisolvent Process"
  Sung-Joo Hwang (Yonsei Institute of Pharmaceutical Sciences, College of Pharmacy, Yonsei University, Korea)
- "In Silico Prediction of Percutaneous Penetration"
  Kakuji Tojo (Kyushu Institute of Technology, Japan)
- "Micelle-like Nanoparticles of Fatty Acid-modified Phospholipids for in vivo Delivery of Nucleic Acid Therapeutics"
  Young Tak Ko (College of Pharmacy, Gachon University, Korea)

Physical Pharmacy & Formulation Design (PFD)

- "Formulation Development Based on Quality by Design Approach"
  Euichaul Oh (College of Pharmacy, The Catholic University of Korea, Korea)
- "Are Isomorphic Solvate/Desolvates Polymorphs or Not?"
  Eun Hee Lee (College of Pharmacy, Korea University, Korea)
- "Effect of Concentration on Thermal Stability of Enbrel (Etanercept) with Biophysical Analyses"
  Seong Hoon Jeong (College of Pharmacy, Dongguk University, Korea)

Biopharmaceutics, Pharmacokinetics & Metabolism (BPM) KSPST-Biologics Research Division (KFDA) Joint Session

- "The Use of Biowaivers: A Comparison of Generic Drugs in the Americas"
  Loenberg Raimar (Chemical Engineering Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Canada)
- "Vitamin D and CYP24A1 in Lung Adenocarcinoma: Alterations in Metabolism of Vitamin D"
  So Hee Kim (Department of Pharmacy, College of Pharmacy, Ajou University, Korea)
- "Problem Solving in Pharmacokinetic Experiments During Early Stage Drug Discovery"
  Eun Jung Kim (Drug Discovery Research Laboratories, Dong-A Pharmaceutical Co. Ltd., Korea)

Hosted by
The Korean Society of Pharmaceutical Sciences and Technology

Supported by

- The Korean Federation of Science and Technology Societies
- Biologics Research Division/KFDA
- Gwangju Convention & Visitors Bureau
- The Korean Pharmaceutical Association
- Korea Pharmaceutical Manufacturers Association

November 29-30, 2012
Hotel Holiday Inn Gwangju

water-soluble drug, by melt-adsorption method using supercritical CO2. Fenofibrate was adsorbed onto Neusilin® UFL2 using melt adsorption using supercritical CO2. For comparison, fenofibrate-loaded Neusilin® UFL2 was prepared by solvent evaporation and hot melt-adsorption methods. The prepared fenofibrate formulations were characterized by differential scanning calorimetry, powder X-ray diffractometry, specific surface area, pore size distribution, scanning electron microscopy, and energy-dispersive X-ray spectrometry. In vitro dissolution and in vivo bioavailability were also investigated. Fenofibrate was distributed into the pores of Neusilin® UFL2 and exhibited reduction in crystal formation following adsorption. Supercritical CO2 facilitated the introduction of fenofibrate into the pores of Neusilin® UFL2. Fenofibrate from the prepared powders showed significantly increased dissolution rate and bioavailability more than raw fenofibrate. In particular, the area under the drug concentration-time curve (AUC0→12h) and maximal serum concentration (C_{max}) of the powders prepared using supercritical CO2 were 4.62- and 4.52-fold greater than the corresponding values for raw fenofibrate. The results of this study highlight the usefulness of the melt-adsorption method using supercritical CO_2 for enhancing the bioavailability of fenofibrate.

[pPFD-025] [29/11/2012 (Thur) 15:00-18:00 / Lobby]

A new solid self-microemulsifying drug delivery system (SMEDDS) prepared by spray-drying to improve the stability and bioavailability of clopidogrel napadisilate monohydrate

Dong Wuk Kim[1)], Min Seok Kwon[1)], Abid Yousaf[1)], Fakhar Din[1)], Jong Oh Kim[2)], Chul Soon Yong[2)], Jin-Ki Kim[1)], and Han-Gon Choi[1)]

[1)]College of Pharmacy, Hanyang University, 55 Hanyangdaehak-ro, Sangnok-gu, Ansan 426-791, South Korea, and [2)]College of Pharmacy, Yeungnam University, 214-1, Dae-Dong, Gyongsan 712-749, South Korea

Purpose. To develop a novel clopidogrel napadisilate monohydrate-loaded solid self-microemulsifying drug delivery system (SMEDDS) with enhanced stability and bioavailability.

Methods. Liquid SMEDDS composed of oil (Peceol), surfactant (Cremophor RH60) and co-surfactant (Transcutol HP) for oral administration was formulated. Pseudo-ternary phase diagram was used to evaluate the emulsification domain and to confirm formulation. Solid SMEDDS formulations were developed by spray drying liquid SMEDDS along with the solid carriers. The physicochemical characterization was accomplished by particle size determination, scanning electron microscopy (SEM), differental scanning calorimetry (DSC) and powder X-ray diffraction (PXRD). Furthermore, their stability, dissolution and pharmacokinetic study were compared to those of napadisilate and bisulfate powder.

Results. The optimized liquid SMEDDS was a system consisting of Peceol, Cremophor RH60 and Transcutol HP at voluminous ratio of 2:3:1. The crystal form of solid SMEDDS was found to be converted to amorphous form, which was confirmed by the analysis of DSC and PXRD. The final