DMPK Theme Issues

【DMPK 31 (1), 2016】
Analytical chemistry for ADMET research: Recent advances and future directions in LC-MS/MS and omics approaches
Yoshinari K and Yamashita K

1. Developments of mass spectrometry-based technologies for effective drug development linked with clinical poteomes
Nakayama N, Bando Y, Fukuda T, Kawamura T, Nakamura H, Marko-Varga G and Nishimura T

2. Routine therapeutic drug monitoring of tyrosine kinase inhibitors by HPLC-UV or LC-MS/MS methods
Miura M and Takahashi N

3. Application of metabonomics to toxicology of drug of abuse: A mini review of metabonomics approach to acute and chronic toxicity studies
Zaitsu K, Hayashi Y, Kusano M, Tsuchihashi H and Ishii A

4. Oxidative stress-mediated N-terminal protein modifications and MS-based approaches for N-terminal proteomics
Lee SH and Oe T

5. New era of integrated cancer biomarker discovery using reverse-phase protein arrays
Nishizuka SS and Mills GB

6. Fully validated LCMS bioanalysis of Bevacizumab in human plasma using nano-surface and molecular-orientation limited (nSMOL) proteolysis
Iwamoto N, Umino Y, Aoki C, Yamane N, Hamada A and Shimada T

【DMPK 30 (1), 2015】
Significance of non-cytochrome P450 (non-P450) enzymes in basic science, clinical field and drug development
Ogura K and Ishii Y

1. Structural plasticity in the human cytosolic sulfotransferase dimer and its role in substrate selectivity and catalysis
Tibbs ZE, Rohn-Glowacki KJ, Crittenden F, Guidry AL and Falany CN

2. Prediction of hepatic and intestinal glucuronidation using in vitro-in vivo extrapolation
Naritomi Y, Nakamori F, Furukawa T and Tabata K

3. A comprehensive review of UDP-glucuronosyltransferase and esterase for drug
4. Significance of aldehyde oxidase during drug development: Effects on drug metabolism, pharmacokinetics, toxicity, and efficacy
   Sanoh S, Tayama Y, Sugihara K, Kitamura S and Ohta S

**[DMPK 29 (1), 2014]**
**The cutting-edge of clinical therapeutics based on pharmacokinetic/pharmacodynamic theory**
**Hosoya K and Inoue K**

1. Optimization of mycophenolic acid therapy using clinical pharmacometrics
   Dong M, Fukuda T and Vinks AA

2. Molecular basis for pharmacokinetics and pharmacodynamics of methotrexate in rheumatoid arthritis therapy
   Inoue K and Yuasa H

3. Optimization of cancer chemotherapy on the basis of pharmacokinetics and pharmacodynamics: from patients enrolled in clinical trials to those in the ‘real world’
   Fujita K and Sasaki Y

**[DMPK 28 (1), 2013]**
**Clinical impact and evidence of pharmacokinetics change**
**Ogihara T**

1. Impact of genetic variation of OATP transporters to drug disposition and response
   Gong IY and Kim RB

2. Polymorphic transporters and platinum pharmacodynamics
   Sprowi JA, Ness RA and Sparreboom A

3. Impact of genetic polymorphisms in *CYP2C9* and *CYP2C19* on the pharmacokinetics of clinically used drugs
   Hirota T, Eguchi S and Ieiri I

4. Clinical evidence of pharmacokinetic changes in thalidomide therapy
   Nakamura K, Matsuzawa N, Ohmori S, Ando Y, Yamazaki H and Matsunaga T

**[DMPK 27 (1), 2012]**
**Basic studies of pharmacogenomics and its application for drug development**
**Saito Y and Hiratsuka M**
1. The impact of pharmacogenomics research on drug development
   Lion SY, Stringer F and Hirayama M

2. Population differences in major functional polymorphisms of pharmacokinetics/
   pharmacodynamics-related genes in Eastern Asians and Europeans: Implication in the
   clinical trials for novel drug development
   Kurose K, Sugiyama E and Saito Y

3. Pharmacogenomics of CYP2D6: Molecular genetics, interethnic differences and clinical
   importance
   Teh LK and Bertilsson L

4. In vitro assessment of the allelic variants of cytochrome P450
   Hiratsuka M

5. Functional significance of genetic polymorphisms in P-glycoprotein (MDR1, ABCB1) and
   breast cancer resistance protein (BCRP, ABCG2)
   Ieiri I

6. Genetic polymorphisms of OATP transporters and their impact on intestinal absorption
   and hepatic disposition of drugs
   Nakanishi T and Tamai I

7. Pharmacogenomics of tamoxifen: roles of drug metabolizing enzymes and transporters
   Kiyotani K, Mushiroda T, Nakamura Y and Zembutsu H

8. A recent update of pharmacogenomics in drug-induced severe skin reactions
   Wei CY, Ko TM, Shen CY and Chen YT

【DMPK 26 (1), 2011】
Current topics in drug metabolism and drug toxicity
Nagata K and Watanabe K

1. Mechanisms of drug toxicity and relevance to pharmaceutical development
   Guengerich FP

2. Role of biotransformation in drug-induced toxicity: Influence of intra- and inter-species
   differences in drug metabolism
   Baillie TA and Rettie AE

3. Progression of alcoholic and non-alcoholic steatohepatitis: Common metabolic aspects of
   innate immune system and oxidative stress
   Sakaguchi S, Takahashi S, Sasaki T, Kumagai T and Nagata K
4. Involvement of the immune system in idiosyncratic drug reactions
   Zhang X, Liu F, Chen X, Zhu X and Uetrecht J

5. Drug-induced idiosyncratic hepatotoxicity: Prevention strategy developed after the troglitazone case
   Ikeda T

【DMPK 25 (1), 2010】
Update on prediction of drug metabolizing enzymes- and transporter-based drug interactions
Ito K and Nakajima M

1. Drug interaction studies on new drug applications: current situations and regulatory views in Japan
   Nagai N

2. System-dependent outcomes during the evaluation of drug candidates as inhibitors of cytochrome P450 (CYP) and uridine diphosphate glucuronosyltransferase (UGT) enzymes: Human hepatocytes versus liver microsomes versus recombinant enzymes
   Parkinson A, Kazmi F, Buckley DB, Yerino P, Ogilvie BW and Paris BL

3. Contribution of intestinal cytochrome P450-mediated metabolism to drug-drug inhibition and induction interactions
   Galetin A, Gertz M and Houston JB

4. Theoretical considerations on quantitative prediction of drug-drug interactions
   Hisaka A, Ohno Y, Yamamoto T and Suzuki H

5. Ongoing challenges in drug interaction safety: from exposure to pharmacogenomics
   Bai JPF

6. Emerging new technology: QSAR analysis and MO calculation to characterize interactions of protein kinase inhibitors with the human ABC transporter, ABCG2 (BCRP)
   Saito H, An R, Hirano H and Ishikawa T

【DMPK 24 (4), 2009】
Albumins with new functions and clinical applications
Imai T

1. Structural and mutagenic approach to create human serum albumin-based oxygen carrier and photosensitizer
   Komatsu T, Nakagawa A and Qu X

2. Albumin as fatty acid transporter
3. Albumin as a nitric oxide-traffic protein: Characterization, biochemistry and possible future therapeutic applications
   Ishima Y, Kragh-Hansen U, Maruyama T and Otagiri M

4. The versatile MHC class I-related FcRn protects IgG and albumin from degradation: Implications for development of new diagnostics and therapeutics
   Andersen JT and Sandlie I

5. Ischemia modified albumin: A novel biomarker for the detection of cardiac ischemia
   Gaze DC

6. Lessons from the crystallographic analysis of small molecule binding to human serum albumin
   Curry S

7. Updates on contemporary protein binding techniques
   Chuang VTG, Maruyama T and Otagiri M

**[DMPK 24 (1), 2009]**

**Mechanism-based PKPD projections in exploratory drug development**

Kawai R

1. Incorporating receptor theory in mechanism-based pharmacokinetic-pharmacodynamic (PK-PD) modeling
   Ploeger BA, Graaf PH and Danhof M

2. Scaling pharmacodynamics from *in vitro* and preclinical animal studies to humans
   Mager DE, Woo S, and Jusko WJ

3. Mechanistic basis of using body size and maturation to predict clearance in humans
   Anderson BJ and Holfrod NHG

4. In vitro-in vivo extrapolation of transporter-mediated clearance in the liver and kidney
   Kusuhara H and Sugiyama Y

5. A framework for assessing inter-individual variability in pharmacokinetics using virtual human populations and integrating general knowledge of physical chemistry, biology, anatomy, physiology and genetics: A tale of ‘bottom-up’ vs ‘top-down’ recognition of covariates
   Jamei M, Dickinson GL and Rostami-Hodjegan A

6. Modeling and simulation of preclinical cardiac safety: towards and integrative framework
   Soubret A, Helminger G, Dumotier B, Bibas R and Georgieva A
Membrane transporters beyond the transport: pharmacological and toxicological aspects
Kato Y and Tamai I

1. Impact of genetic polymorphisms of transporters on the pharmacokinetic, pharmacodynamics and toxicological properties of anionic drugs
   Maeda K and Sugiyama Y

2. Role and relevance of PEPT2 in drug disposition, dynamics, and toxicity
   Kamal MA, Keep RF, and Smith DE

3. Organic cation transporters and their pharmacokinetic and pharmacodynamics consequences
   Choi M and Song I

Gene regulation of drug metabolizing enzymes and transporters
Nagata K

1. Regulation of hepatocyte nuclear factor 4α-mediated transcription
   Gonzalez FJ

2. The roles of nuclear receptors CAR and PXR in hepatic energy metabolism
   Konno Y, Negishi M and Kodama S

3. Interplay of pregnane X receptor with other nuclear receptors on gene regulation
   Lim YP and Huang JD