DMPK Theme Issues

【DMPK 33 (1), 2018】
State-of-the-art technologies: In vitro and in vivo models mimicking the human drug metabolism and pharmacokinetics
Tabata K and Hirabayashi H

1. A CYP2B6-humanized mouse model and its potential applications
Li L and Zhang QY, and Ding X

2. Species differences in drug glucuronidation: Humanized *UDP-glucuronosyltransferase 1* mice and their application for predicting drug glucuronidation and drug-induced toxicity in humans
Fujiwara R, Yoda E, and Tukey RH

3. Human and mouse artificial chromosome technologies for studies of pharmacokinetics and toxicokinetics
Satoh D, Abe S, Kobayashi K, Nakajima Y, Oshimura M, and Kazuki Y

4. Chimeric mice with humanized liver: Application in drug metabolism and pharmacokinetics studies for drug discovery
Naritomi Y, Sanoh S, Ohta S

5. Technical aspect of microphysiological systems (MPS) as a promising wet human-*in-vivo* simulator
Kanamori T, Sugiura S and Sakai Y

6. Organ/Body-on-a-chip based on microfluidic technology for drug discovery
Kimura H, Sakai Y, and Fujii T

7. Organs-on-a-chip: Current applications and consideration pointes for in vitro ADME-Tox studies
Ishida S

【DMPK 32 (1), 2017】
Prediction of the potential risk of idiosyncratic drug toxicity
Ito K and Kobayashi K

1. Toxicological potential of acyl glucuronides and its assessment
Iwamura A, Nakajima M, and Yokoi T

2. Generation of human pluripotent stem cell-derived hepatocyte-like cells for drug toxicity screening
Takayama K and Mizuguchi H

3. Human leukocyte antigen and idiosyncratic adverse drug reactions

Usui T and Naisbitt DJ

4. Docking simulations between drugs and HLA molecules associated with idiosyncratic drug toxicity

Hirayama N

5. The role of quantitative systems pharmacology modeling in the prediction and explanation of idiosyncratic drug-induced liver injury

Woodhead JL, Watkins PB, Howell BA, Siler SQ, and Shoda LKM

【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 metabolomics to toxicology of drug of abuse: A mini review of metabolomics 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 development
Oda S, Fukami T, Yokoi T and Nakajima M

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

   van der Vusse GJ

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 Holford 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

【DMPK 23 (4), 2008】

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

【DMPK 23 (1), 2008】

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