

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 metabolomics to toxicology of drug of abuse: A mini review of metabolomics approach to acute and chronic toxicity studies
Zaitso 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

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 an 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 4 α -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