

The 28th Chromatography Symposium (Tokushima, On-line meeting)

Thursday, June 10

8:55-9:00 Opening Remarks (Toshio Takayanagi)

9:00-9:40 (Makoto Takahashi)

S-01 **Strategy of Method Establishment for Bioanalysis in Drug Development**

Noriyuki Koyama; Tokushima Research Institute, Otsuka Pharmaceutical Co., Ltd.

9:50-10:35 (Kenji Sueyoshi)

O-01 **Molecular weight control and GPC evaluation of ionic polymers**

(P-01) Kai Nomura (1)*, Tetsuya Tanigawa (1,2), Ken Hosoya (1); (1) Graduate School of Life and Environmental Sciences, Kyoto Prefectural University, (2) Chemco

O-02 **Kinetic analysis of oxidation of tyrosine with tyrosinase by capillary electrophoresis / dynamic frontal analysis**

(P-05) Masanori Mine (1)*, Hitoshi Mizuguchi (2), Toshio Takayanagi (2); (1) Graduate School of Advanced Technology and Science, Tokushima University, (2) Graduate School of Technology, Industrial and Social Sciences, Tokushima University

O-03 **Development of a Two-Dimensional Chiral HPLC System for the Simultaneous Determination of Lactate, Hydroxybutyrates and Malate**

(P-23) Hsin-Miao Tsai (1)*, Chin-Ling Hsieh (1), Chiharu Ishii (1), Takeyuki Akita (1), Masashi Mita (2), Jen-Ai Lee (3), Kenji Hamase (1); (1) Graduate School of Pharmaceutical Sciences, Kyushu University, (2) KAGAMI, Inc., (3) School of Pharmacy, Taipei Medical University

10:50-11:50 (Kenichiro Todoroki)

I-01 **Drug analysis in the police**

Kenji Tsujikawa, National Research Institute of Police Science

I-02 **Application of Chromatographic Technology to Exposure Dynamic Studies of Environmental Contaminants**

Tomohiko Isobe*, Miyuki Iwai-Shimada, Yayoi Kobayashi, Mai Takagi, Shoji F. Nakayama; National Institute for Environmental Studies

12:10-13:10 Luncheon Seminar

L-01 **The Usage technique of ultra pure-water for analysis**

Yoshifumi Kuroki*; ELGA LabWater

13:30-14:30 Poster Session (Odd number)

14:45-15:45 (Hirobumi Sunayama)

O-04 **The Utilization of Triacetyl-Bonded Silica Coated with Imidazolium Ions for Capillary Ion Chromatographic Determination of Inorganic Anions**

Anang SEDYOHUTOMO*, Hiroshi SUZUKI, Chuzo FUJIMOTO; Hamamatsu University School of Medicine

O-05 **Evaluation of Retention Characteristics on Capillary Columns with ZnO Nanowire**

Eisuke Kanao (1, 2)*, Katsuya Nakano (3), Takuya Kubo (3), Koji Otsuka (3), Takuro Hosomi (4), Takeshi Yanagida (4), Jun Adachi (1, 2), Yasushi Ishihama (1, 2); (1) Graduate School of Pharmaceutical Sciences, Kyoto University; (2) National Institutes of Biomedical Innovation, Health and Nutrition; (3) Graduate School of Engineering, Kyoto University, (4) Graduate School of Engineering, Tokyo University.

O-06 **Development of monolithic columns modified with Metal-Organic-Frameworks**

Takuya Kubo (1)*, Ryoichiro Matsuura (1), Nobuhiko Hosono (2), Takashi Uemura (2), Koji Otsuka (1); (1) Graduate School of Engineering, Kyoto University; (2) Graduate School

- of Engineering, The University of Tokyo
- O-07 **Study on retention behavior in ultralow-temperature HPLC with stationary phases of various alkyl chains and development of stationary phase of branched alkyl chains**
Shinya Kitagawa*, Takayuki Kanayama, Hajime Ohtani; Graduate School of Engineering, Nagoya Institute of Technology

16:00-17:00 (Masaki Takeuchi)

- I-03 **Development of a Hyphenated Analysis System of Ultra-Thin Layer Chromatography with Surface-Assisted LDI-MS**
Tomonari Umemura (1)*, Takao Yasui (2); (1) School of Life Sciences, Tokyo University of Pharmacy and Life Sciences; (2) Graduate School of Engineering, Nagoya University
- I-04 **Analyses of salivary ions using capillary electrophoresis and relationship with bioactive substances**
Masanobu Mori*, Graduate School of Science and Technology, Kochi University

Friday, June 11

9:00-9:40 (Shinya Kitagawa)

- S-02 **Metabolome analysis of elements using hyphenated technique**
Yayoi Kobayashi*, National Institute for Environmental Studies

9:50-10:50 (Tomonari Umemura)

- O-08 **Selective Determination of Chiral Amino Acids in Mammalian Plasma Using a Two-Dimensional LC-MS/MS System**
Chiharu Ishii (1)*, Yukiko Shimizu (2), Takeyuki Akita (1), Masashi Mita (3), Tomomi Ide (4), Tadashi Okamura (2), Kenji Hamase (1); (1) Graduate School of Pharmaceutical Sciences, Kyushu University; (2) National Center for Global Health and Medicine (NCGM); (3) KAGAMI Inc.; (4) Graduate School of Medical Sciences, Kyushu University
- O-09 **Development of a Three-Dimensional Chiral HPLC System for the Extraterrestrial Amino Acids and Application to Carbonaceous Meteorites**
Aogu Furusho (1)*, Chiharu Ishii (1), Takeyuki Akita (1), Masashi Mita (2), Hiroshi Naraoka (3), Kenji Hamase (1); (1) Graduate School of Pharmaceutical Sciences, Kyushu University; (2) KAGAMI, Inc.; (3) Department of Earth and Planetary Sciences, Kyushu University
- O-10 **Optimization of Analytical Procedure for Rapid Quantification of Serum Level of Favipiravir for Treatment of COVID-19**
Yukiko Moriiwa (1)*, Go Morikawa (2), Katsuko Okazawa (2), Akio Yanagida (1); (1) School of Pharmacy, Tokyo University of Pharmacy and Life Sciences; (2) Department of Pharmacy, Hokushin General Hospital
- O-11 **Development of DNA libraries with/without preorganized structures based on capillary sieving electrophoresis for selecting aptamers targeting small molecules**
Kenji Sueyoshi (1, 2)*, Masahide Wada (1), Tatsuro Endo (1), Hideaki Hisamoto (1); (1) Graduate School of Engineering, Osaka Prefecture University; (2) PRESTO, JST

11:00-12:00 Poster Session (Even number)

12:10-13:10 Luncheon Seminar

- L-02 **Food analysis by universal detector**
Katsutoshi Shimizu, Momoko Miyano, Yusuke Hosen; Hitachi High-Tech Science Corporation

13:20-14:20 (Takuya Kubo)

- I-05 **Data-driven science using metabolomics**
Masahiro Sugimoto (1)(2)*; (1) Institute for Medical Science, Tokyo Medical University;
(2) Institute for Advanced Biosciences, Kio University
- I-06 **DNA aptamer selection by means of CE separation and machine learning**
Shingo Saito (1)*; (1) Graduate School of Science and Technology, Saitama University
- 14:30 Commendation
- 14:45 Closing Remarks

Posters

- P-01 **Molecular weight control and GPC evaluation of ionic polymers**
(O-01) Kai Nomura (1)*, Tetsuya Tanigawa (1,2), Ken Hosoya (1); (1) Graduate School of Life and Environmental Sciences, Kyoto Prefectural University, (2) Chemco
- P-02 **Investigation of the workflow for method transition to SFC from HPLC**
Akitaka Terada*, Yasuyo Sato; JASCO Corporation.
- P-03 **Determination of pyroglutamyl dipeptides in FBRA by LC/ESI-MS/MS**
Tatsuya Higashi (1)*, Riko Imamura (1), Yukiko Horie (1,2) and Shigeo Ikegawa (2); (1) Faculty of Pharmaceutical Sciences, Tokyo University of Science, (2) Koken Co., Ltd.
- P-04 **Development of a method for analysis of side-chain dihydroxylated vitamin D₃ metabolites in human urine by LC/ESI-MS/MS**
Kazunari Takada (1)*, Moeka Togashi (2), Shoichi Kusunose (2), Tatsuya Higashi (2); (1) Graduate School of Pharmaceutical Sciences, Tokyo University of Science, (2) Faculty of Pharmaceutical Sciences, Tokyo University of Science
- P-05 **Kinetic analysis of oxidation of tyrosine with tyrosinase by capillary electrophoresis /**
(O-02) **dynamic frontal analysis**
Masanori Mine (1)*, Hitoshi Mizuguchi (2), Toshio Takayanagi (2); (1) Graduate School of Advanced Technology and Science, Tokushima University; (2) Graduate School of Technology, Industrial and Social Sciences, Tokushima University
- P-06 **Development of fluorescence derivatization of *o*-phosphoethanolamine followed by HPLC analysis**
Tomomi Sakamoto (1)*, Miharu Nakamura (1), Ryoko Tomita (1), Rintaro Sogawa (2), Chisato Shimanoe (2), Nao Nishijyo (1), Tadashi Hayama (1), Toshihiro Fujioka (1); (1) Faculty of Pharmaceutical Sciences, Fukuoka University, (2) Department of Pharmacy, Saga University Hospital
- P-07 **Gradient Elution in Non-aqueous Capillary Gel Electrophoresis**
Kota Araki*, Isoshi Nukatsuka, Fumihiko Kitagawa; Graduate School of Science and Technology, Hirosaki University
- P-08 **Amino acid metabolomics approach to diagnosing the major depressive disorder**
Sayaka Yagi (1)*, Ryoko Tomita (1), Rintaro Sogawa (2), Chisato Shimanoe (2), Nao Nishijyo (1), Tadashi Hayama (1), Toshihiro Fujioka (1); (1) Faculty of Pharmaceutical Sciences, Fukuoka University, (2) Department of Pharmacy, Saga University Hospital
- P-09 **Evaluation of the retention properties of a triptycene-polymer based stationary phase**
Ikari Seiji*, Takuya Kubo, Koji Otsuka; Graduate School of Engineering, Kyoto University.
- P-10 **Development of a selective separation method for exosomes based on the surface structures**
Shuntaro Wada*, Takuya Kubo, Kazunari Akiyoshi, Koji Otsuka; Graduate School of Engineering, Kyoto University.
- P-11 **Development of Perchlorate Determination Method by Ion Chromatography in River Water**
Madoka Nishimura (1), Yukari Nakaya (2), Hideji Tanaka (2,3), Masaki Takeuchi (2,3); (1) Graduate School of Pharmaceutical Sciences, Tokushima University; (2) Faculty of Pharmaceutical Sciences, Tokushima University; (3) Graduate School of Biomedical Sciences, Tokushima University
- P-12 **Kinetic analysis of enzymatic reaction of pyruvate kinase by capillary electrophoresis/dynamic frontal analysis**
Hiroya Shimizu (1), Masanori Mine (2), Hitoshi Mizuguchi (3), Toshio Takayanagi (3); (1) Graduate School of Sciences and Technology for Innovation, Tokushima University; (2) Graduate School of Advanced Technology and Science, Tokushima University; (3) Graduate School of Technology, Industrial and Social Sciences, Tokushima University
- P-13 **Development of Portable On-Line Analytical System for NH₃ Gas**
Haruka Tanaka (1)*, Makoto Namikawa (1), Hideji Tanaka (1,2), Masaki Takeuchi (1,2); (1) Faculty of Pharmaceutical Sciences, Tokushima University; (2) Graduate School of

- Biomedical Sciences, Tokushima University
- P-14 **Metabolomic analysis of ocular-related diseases by simultaneous analysis of water-soluble metabolites using LC-MS**
Yasuko Aita (1)*, Atsumi Tomita (1), Ryo Wakita (2), Yumi Aizawa (1), Masahiro Sugimoto(1, 3), Yoshiko Usui (2), Hiroshi Goto (2); (1) Tokyo Medical University; (2) Tokyo Medical University Hospital; (3) Keio University
- P-15 **Study on adsorption properties of particulate sorbent-molded media bound by commercial adhesives**
Yuta Miki*, Hiroya Murakami, Yoshinori Inoue, Norio Teshima; Department of Applied Chemistry, Aichi Institute of Technology
- P-16 **Rapid Determination of Volatile Organic Compounds in Soil Samples using Needle-Type Extraction Device**
Shuhei Kamei (1)*, Ikuo Ueta (1), Yoshihiro Saito (2); (1) Department of Applied Chemistry, University of Yamanashi; (2) Department of Applied Chemistry and Life science, Toyohashi University of Technology
- P-17 **Determination of Volatile Organic Compounds in Water using Porous PTFE Membrane and Needle-Type Extraction Device**
Taiga Komatsu (1)*, Ikuo Ueta (1), Yoshihiro Saito (2); (1) Department of Applied Chemistry, University of Yamanashi ; (2) Department of Applied Chemistry and Life Science, Toyohashi University of Technology
- P-18 **Development of Immunochromatographic Method for Simple Drug Quantification Using Anti-Idiotypic DNA Aptamers as Capture Molecules**
Ryota Isobe*, Nao Kobayashi, Tomohiro Yamada, Eiji Sugiyama, Hajime Mizuno, Kenichiro Todoroki; School of Pharmaceutical Sciences, University of Shizuoka
- P-19 **Development of the molecularly imprinted polymers using halogen bonding**
Hayato Osaki 1*, Takuya Kubo 1, Daisuke Nakajima 2, Koji Otsuka 1; 1 Kyoto University, 2 National Institute for Environmental Studies.
- P-20 **HPLC fluorescence method for eugenols derivatized with DIBI in basil products**
Makoto Takada (1)*, Masashi, Sakamoto (1), Haruna Yamada (2), Naoya Kisikawa (3), Junpei Mutoh (1), Yukihide Shiraishi (2), Naotaka Kuroda (3), Mitsuhiro Wada (1); (1) Faculty of Pharmaceutical Sciences, Sanyo-onoda City University; (2) Faculty of Engineering, Sanyo-onoda City University; (3) Graduate School of Biomedical Sciences
- P-21 **Retention Behavior of Poly(4-vinylpyridine) Stationary Phase in Reversed-Phase Liquid Chromatography**
Koki Nakagami (1)*, Ohjiro Sumiya (1), Keiichi Shimizu (1), Ikuo Ueta (2), Yoshihiro Saito (1); (1) Department of Applied Chemistry and Life Science, Toyohashi University of Technology; (2) Department of Applied Chemistry, University of Yamanashi
- P-22 **A durable and generalized method to determine N-nitrosodimethylamine in drug substances using off-line solid-phase extraction followed by liquid chromatography–tandem mass spectrometry**
Eiichi Yamamoto*, Hitomi Kan-no, Naomi Tomita, Daisuke Ando, Tamaki Miyazaki, Ken-ichi Izutsu; National Institute of Health Sciences
- P-23 **Development of a Two-Dimensional Chiral HPLC System for the Simultaneous**
(O-03) **Determination of Lactate, Hydroxybutyrates and Malate**
Hsin-Miao Tsai (1)*, Chin-Ling Hsieh (1), Chiharu Ishii (1), Takeyuki Akita (1), Masashi Mita (2), Jen-Ai Lee (3), Kenji Hamase (1); (1) Graduate School of Pharmaceutical Sciences, Kyushu University, (2) KAGAMI, Inc., (3) School of Pharmacy, Taipei Medical University
- P-24 **Enantioselective Analysis of Lactate in Japanese Traditional Amber Rice Vinegar and the Developmental Changes During Fermentation Processes**
Chin-Ling Hsieh (1)*, Chiharu Ishii (1), Takeyuki Akita (1), Akira Fujii (2), Masanobu Nagano (2), Masashi Mita (3), Jen-Ai Lee (4), Kenji Hamase (1); (1) Graduate School of Pharmaceutical Sciences, Kyushu University, (2) Sakamoto Kurozu, Inc., (3) KAGAMI, Inc., (4) School of Pharmacy, Taipei Medical University

- P-25 **Analysis of Serine Enantiomers in Human Plasma Using a Tandem Column 2D-HPLC System**
Chinatsu Yamasaki (1)*, Chiharu Ishii (1), Takeyuki Akita (1), Masashi Mita (2), Tomomi Ide (3), Kenji Hamase (1); (1) Graduate School of Pharmaceutical Sciences, Kyushu University; (2) KAGAMI Inc.; (3) Graduate School of Medical Sciences, Kyushu University
- P-26 **Simultaneous Determination of 15 Saccharides Without Interference by Salt in Seasonings**
Natsuki Iwata*, Shinnosuke Horie, Yoshihiro Hayakawa; Shimadzu Corporation
- P-27 **Development of a fluorescent derivatization-HPLC method for β -aminoisobutyric acid, a skeletal muscle condition biomarker**
Yosuke Shibata* (1), Daichi Hamada (1), Yuki Shinba (2), Eiji Sugiyama (1), Hajime Mizuno (1), Shinji Miura (2), Kenichiro Todoroki (1); (1) School of Pharmaceutical Sciences, University of Shizuoka; (2) School of Food and Nutritional Sciences, University of Shizuoka
- P-28 **Switching Separation Modes in Quercetin-imprinted Polymer Bearing Iron Porphyrin Residues**
Utano Kawashima*, Miki Nakaoka, Nodoka Terao, Ryuya Sato, Haruka Ido, Sakura Onishi, Issei Suenaga, Takashi Murashima, Jun Matsui; Department of Nanobiochemistry, Konan University
- P-29 **Human Serum Albumin-imprinted Polymer Nanogels Prepared Using a Monomer Possessing Ligand Moiety**
Takahiro Morishita (1), Hirobumi Sunayama (1)*, Yukiya Kitayama (1), Toshifumi Takeuchi (2,3); (1) Graduate School of Engineering, Kobe University; (2) Innovation Commercialization Division, Kobe University, (3) Center for Advanced Medical Engineering Research & Development (CAMED), Kobe University
- P-30 **Pyrethroid pesticides analysis in human plasma using polypyrrole nanowires for microextraction**
Yanting Song (1), Makoto Tsunoda (2)*; (1) School of Pharmaceutical Sciences, Hainan University; (2) Graduate School of Pharmaceutical Sciences, University of Tokyo
- P-31 **Structural determination of clinofibrate photoproducts generated by UV irradiation based on ESI-LC/MS/MS analysis**
Kohei Kawabata*, Masanori Inagaki, Hiroyuki Nishi; Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Yasuda Women's University