

The 30th Annual Meeting of the Japanese Society for Biomedical Mass Spectrometry

MS Diagnostics: Present & Future

Program

September 8 (Thu) – 9 (Fri), 2005

Senri Life Science Center
1-4-2 Shinsenri-higashi-machi, Toyonaka, Osaka 560-0082
Japan

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Time Schedule

September 8 (Thursday)

- 9:10 Opening Remark
- 9:15 Oral Presentation I (G1-G5)
- 10:30 <Coffee Break>
- 10:45 Oral Presentation II (G6-G9)
- 11:45 <Lunch Time> (Board Meeting)
- 13:00 JSBMS Business Meeting
- 13:35 Workshop
- 15:15 <Coffee Break>
- 15:30 Oral Presentation III (G10-G14)
- 16:50 Award Lecture (MIPL & AL1-AL3)
- 18:30 Banquet

September 9 (Friday)

- 9:00 Oral Presentation IV (G15-G20)
- 10:30 <Coffee Break>
- 10:45 Oral Presentation V (G21-G25)
- 12:00 <Lunch Time> (Lunchon)
- 13:10 Plenary Lecture
- 14:10 <intermission>
- 14:15 Oral Presentation VI (G26-G29)
- 15:15 <Coffee Break>
- 15:25 Oral Presentation VII (G30-G34)
- 16:40 Closing Lecture and Remark

Program

September 8 (Thursday)

9:10-9:15 Opening Remark

9:15-10:30 Oral Presentation I (G1-G5)

- G1 **Sensitive analysis of amanitins in human biological fluids by liquid chromatography/electrospray-ion trap mass spectrometry**
Masakazu TANAHASHI^{1,2}, Rina KANEKO¹, Makoto HAMAJIMA¹, Yukari HIRATA¹, Tetsuya ARINOBU³, Kanako WATANABE⁴, Akira ISHII¹
1. Department of Legal Medicine, Fujita Health University School of Medicine
2. Forensic Science Laboratory, Aichi Prefectural Police Headquarters
3. Department of Legal Medicine, Aichi Medical University School of Medicine
4. Department of Legal Medicine, Hamamatsu University School of Medicine
- G2 **Analysis of human blood butyrylcholinesterase-sarin adducts using liquid chromatography / mass spectrometry**
Kouichiro TSUGE, Yasuo SETO
National Research Institute of Police Science
- G3 **Determination of selegiline and its metabolite in human body fluids by headspace solid-phase microextraction and gas chromatography/mass spectrometry**
Ayako KURIKI¹, Takeshi KUMAZAWA¹, Xiao-Pen LEE¹, Chika HASEGAWA¹, Osamu SUZUKI², Keizo SATO¹
1. Department of Legal Medicine, Showa University School of Medicine
2. Department of Legal Medicine, Hamamatsu University School of Medicine
- G4 **Analysis of antihistamines by MonoTip[®] C₁₈ extraction and gas chromatography/mass spectrometry**
Chika HASEGAWA¹, Takeshi KUMAZAWA¹, Xiao-Pen LEE¹, Ayako KURIKI¹, Hiroshi SENO², Akira ISHI³, Keizo SATO¹
1. Department of Legal Medicine, Showa University School of Medicine
2. Department of Legal Medicine, Aichi Medical University School of Medicine
3. Department of Legal Medicine, Fujita Health University School of Medicine
- G5 **A new sampling method for lipid mediators in medical samples for MS analysis.**
Keita SAITO¹, Toru OBATA², Mayumi NOMURA², Takehiro INOUE², Youichi KASE¹, Yasumasa TANIFUJI¹
1. Department of Anesthesiology, Jikei University School of Medicine

2.Department of Molecular Cell Biology, Institute of DNA Medicine, Jikei University School of Medicine

10:30~10:45 <Coffee Break>

10:45~11:45 Oral Presentation II (G6-G9)

G6 The analysis time reduction using the fast-GC/MS method and retention index in organic acids

Katsuhiro NAKAGAWA¹, Shuichi KAWANA¹, Hasegawa Yuki², Masahiko KIMURA², Seiji YAMAGUCHI²

1.SHIMADZU CORPORATION

2.Department of Pediatrics, Shimane University School of Medicine

G7 Urinary organic acid analysis conducted as a routine clinical test in Hiroshima University Hospital: methylmalonic aciduria detected in an infant who presented with transient hypergalactosemia in newborn mass screening

Takashi ARASE¹, Go TAJIMA², Nobuo SAKURA³, Ikue HATA⁴, Yosuke SHIGEMATSU⁴

1.Examination Support of Hiroshima University Hospital

2.Department of Pediatrics, Hiroshima University Graduate School of Biomedical Sciences

3.Nursing House for Severe Motor and Intellectual Disabilities “Suzugamine”

4.Department of Pediatrics, University of Fukui

G8 Evaluation of carnitine deficiency by tandem mass spectrometry

Hironori KOBAYASHI, Yuki HASEGAWA, Masahiko KIMURA, Seiji YAMAGUCHI

Department of Pediatrics, Shimane University School of Medicine

G9 MS/MS measurement of underivatized sample for newborn screening

Yosuke SHIGEMATSU¹, Ikue HATA², Yukie TANAKA³

1.Department of Health Science, Faculty of Medical Sciences, University of Fukui

2.Department of Pediatrics, Faculty of Medical Sciences, University of Fukui

3.Centers for Advanced Research Support, University of Fukui

11:45~13:00 <Lunch Time> (Board Meeting)

13:00~13:30 JSBMS Business Meeting

13:30-13:35 <intermission>

13:35~15:15 Workshop

"Neonatal Screening for Metabolic Diseases: The Present State and Future"

WS1 **Understanding of target disorders and methodological aspects in MS/MS newborn screening**

Yosuke SHIGEMATSU¹, Ikue HATA², Yukie TANAKA³

1. Department of Health Science, Faculty of Medical Sciences, University of Fukui

2. Department of Pediatrics, Faculty of Medical Sciences, University of Fukui

3. Centers for Advanced Research Support, University of Fukui

WS2 **Method validation of tandem mass spectrometry for the newborn screening**

Atsuko ABE¹, Masaru FUKUSHI¹, Yosuke SHIGEMATSU²

1. Sapporo City Institute of Public Health

2. Dept of Health Science, Dept of Pediatrics, Faculty of Medical Sciences, University of Fukui

WS3 **Detection reliability of organic acid and fatty acid oxidation disorders by ESI-MS/MS**

Hironori KOBAYASHI, Yuki HASEGAWA, Masahiko KIMURA, Seiji YAMAGUCHI

Department of Pediatrics, Shimane University School of Medicine

WS4 **Neonatal metabolic screening by MS/MS and GC/MS**

Kyoko TASHIRO

Research Institute of Medical Mass Spectrometry, Kurume University School of Medicine

~~Introduction of the commercial~~ **Tandem MS instruments for neonatal mass screening (Corporate presentation)**

15:15~15:30 <Coffee Break>

15:30~16:45 Oral Presentation III (G10-G14)

G10 **Taylor-made medicine and metabolome research for genetic and/or nutritional factors**

Tomiko KUHARA, Morimasa OHSE, Yoshito INOUE, Toshihiro SHINKA

Division of Human Genetics, Medical Research Institute, Kanazawa Medical University

G11 **Analysis of Urinary Sulfated Bile Acids for Screening of Biliary Atresia by ESIMS**

Toshihiro SHINKA, Yoshito INOUE, Morimasa OHSE, Tomiko KUHARA

Division of Human Genetics, Medical Research Institute, Kanazawa Medical University

G12 **Application of optical isomers analysis by GC/MS for condition of patients with Short bowel syndrome**

Yoshito INOUE¹, Toshihiro SHINKA¹, Morimasa OHSE¹, Hiromichi IKAWA², Tomiko KUHARA¹

1. Division of Human Genetics, Medical Research Institute, Kanazawa Medical University

2. Department of Pediatric Surgery, Kanazawa Medical University

G13 **Chemical diagnosis of a hypersarcosinemia patient by GC/MS**

Chunhua Zhang¹, Usha P Dave², Xiaolan Liu¹

1. MILS International

2. CREMERE, India

G14 **Correlations among 3-methylglutaconate and metabolites of leucine, ketone body, citric acid cycle intermediates and dicarboxylic acids in urine in patients with glycogen storage disease type Ia**

Makoto YOSHINO¹, Ichiro YOSHIDA^{1,2}, Takahiro INOKUCHI²

1. Department of Pediatrics and Child Health, Kurume University School of Medicine

2. Research Institute of Medical Mass Spectrometry, Kurume University School of Medicine

16:45~16:50 (intermission)

16:50~17:10 Award Lecture I (IMAL)

MIPL **Gas chromatographic mass spectrometric human metabolome research for disease diagnosis**

Tomiko KUHARA

Division of Human Genetics, Medical Research Institute, Kanazawa Medical University

16:55~17:30 Award Lecture II (AL1-AL3)

AL1 **Highly selective analysis for proteins by mass spectrometry**

Nariyasu MANO

Graduate School of Pharmaceutical Sciences, Tohoku University

AL2 **Simple and rapid analysis for drugs in biological samples by high-performance liquid chromatography/mass spectrometry**

Tetsuya ARINOBU

Department of Chemistry, Aichi Medical University School of Medicine

AL3 **Determination of acrolein by headspace solid-phase microextraction
gas chromatography/mass spectrometry and its clinical application**

Satoshi TAKAMOTO

Department of Pediatrics, Hiroshima University Graduate School of Biomedical
Sciences

18:30~20:00 Banquet

September 9 (Friday)

9:00~10:30 Oral Presentation IV (G15-G20)

- G15 **Simultaneous determination of NSAIDs and NQs by LC-ESI-MS**
Yasushi MIWA, Maya KAZUMI, Masayuki OHTA, Fumiyo KASUYA
Faculty of Pharmaceutical Sciences, Kobegakuin University
- G16 **A new method for the analysis of 1,2,3,4-tetrahydroisoquinoline and 1-methyl-1,2,3,4-tetrahydroisoquinoline as endogenous amines in rodent brain and liver by liquid chromatography- electrospray ionization tandem mass spectrometry(LC-ESI/MS/MS)**
Fumiyo KASUYA¹, Masayuki OHTA¹, Shoko HUKUDA¹, Youji KITAMURA², Kazuo IGARASHI³
1. Faculty of Pharmaceutical Sciences, Kobegakuin University
2. Faculty of Pharmaceutical Sciences, Okayama University
3. Department of Chemistry, Virginia Tech. University
- G17 **Effects of NSAID on lipid metabolism in mouse brain and liver**
Maya KAZUMI, Yasushi MIWA, Masayuki OHTA, Fumiyo KASUYA
Faculty of Pharmaceutical Sciences, Kobegakuin University
- G18 **Evaluation of mutation effects in the UGT1A1 enzyme on estradiol glucuronidation using LC/MS/MS**
Keiko WADA¹, Atsuko TAKEUCHI², Kayoko SAIKI², Masafumi MATSUO¹, Hisahide NISHIO¹
1. Department of Public Health, Kobe University Graduate School of Medicine
2. Kobe Pharmaceutical University
3. Department of Development and Aging, Kobe University Graduate School of Medicine
- G19 **Conditions of the acid and enzymatic hydrolysis of various drug glucuronides in urine**
Noriaki SHIMA, Mayumi NISHIKAWA, Hitoshi TSUCHIHASHI
Forensic Science Laboratory, Osaka Prefectural Police Headquarters
- G20 **Copper level in spontaneously hypertensive rat kidney determined by electrospray ionization mass spectrometry**
Kayoko MINAKATA, Osamu SUZUKI
Department of Legal Medicine, Hamamatsu University School of Medicine

10:30~10:45 <Coffee Break>

10:45~12:00 Oral Presentation V (G21-G25)

- G21 **Analysis of lipid modification of proteins by mass spectrometry**~~(MS)~~
Chie MURATA¹, Yoshiya ODA^{1,2}, Ryo TAGUCHI¹
1. Department of Metabolome, Graduate School of Medicine, The University of Tokyo
2. Laboratory of Seeds Finding Technology, Eisai Co. Ltd.
- G22 **Proteome-based approaches for identification of organ-specific autoantigens to systemic lupus erythematosus**
Tohru TAKEUCHI^{1,2}, Toyofumi NAKANISHI², Akira SHIMIZU²
1. First Department of Internal Medicine, Osaka Medical College
2. Department of Clinical Pathology, Osaka Medical College
- G23 **Proteome analysis of the modified Proteins of B-3 line of transformed human lens epithelial (HLE) cells**
Hiroko ODANI¹, Toyofumi NAKANISHI², Akira SHIMIZU², Shigeru NAKAI¹, Vicent M MONNIER³
1. In-Home Medicine, Nagoya University
2. Department of Clinical Pathology, Osaka Medical College
3. Institute of Pathology, Case Western Reserve University
- G24 **Analysis of specified proteins in liver tissue of mouse treated by glycyrrhizin**
Kuniko MITAMURA, Shigeo IKEGAWA
Faculty of Pharmaceutical Sciences, Kinki University
- G25 **Analysis of stability of disulfide bonds in extracted proteins by using a cleavable affinity gel**
Koichi SATO¹, Nariyasu MANO¹, Junichi GOTO¹
1. Graduate School of Pharmaceutical Sciences, Tohoku University
2. Department of Pharmaceutical Sciences, Tohoku University Hospital

12:00~13:10 <Lunch time> (Lunchon)

13:10~14:10 Plenary Lecture

- PL **Mass spectrometry for the next generation**
Kenzo HIRAOKA
Clean Energy Research Center, University of Yamanashi

14:10~14:15 <intermission>

14:15~15:15 Oral Presentation VI (G26-G29)

- G26 **New approach for lipidomic analysis of high molecular weight glycolipid in mycobacterial cell wall by MALDI-TOF mass spectrometry**
Yukiko FUJITA, Ikuya YANO
Japan BCG Central Laboratory
- G27 **ESI-LC/MS analysis of phospholipids oxidation products in human plasma**
Mariko SATO, Junko ADACHI, Yoshimi SAEKI, Yasuhiro UENO
Department of Legal Medicine, Kobe University Graduate School of Medicine
- G28 **Determination of lysophosphatidylcholines in serum using liquid chromatography-tandem mass spectrometry**
Akihiro TAKATERA¹, Atsuko TAKEUCHI², Chika TAKASHIMA², Kayoko SAIKI², Masafumi MATSUO¹
1. Department of Pediatrics, Kobe University Graduate School of Medicine
2. Kobe Pharmaceutical University
- G29 **A search engine and a profiling tool for lipidomics**
Ryo TAGUCHI
Department of Metabolome, Graduate School of Medicine, The University of Tokyo

15:15~15:25 <Coffee Break>

15:25~16:40 Oral Presentation VII (G30-G34)

- G30 **Identifications of polymerized, oxidized and degraded products of transthyretin *in vivo* and *in vitro*.**
Toyofumi NAKANISHI, Akira SHIMIZU
Department of Clinical Pathology Osaka Medical College
- G31 **Diagnosis of variant hemoglobins using ESI/MS- A case diagnosed as HbSC after death -**
Ayako MIYAZAKI, Toyofumi NAKANISHI, Akira SHIMIZU, Izumi TAKASE, Koichi SUZUKI
1. Department of Clinical Pathology, Osaka Medical College
2. Department of Legal Medicine, Osaka Medical College
- G32 **Relationship between disease progression and stability of mutant SOD1 in FALS**

Takako SATO¹, Toyofumi NAKANISHI², Akira SHIMIZU², Saburo SAKODA¹

1. Department of Neurology, Osaka University Graduate School of Medicine

2. Department of Clinical Pathology, Osaka Medical College

G33 **Improved Protocol and Data Manipulation for Quantitative Proteomics using protease catalyzed ¹⁸O incorporation**

Kei FUKADA¹, Haining, Zhu², Saburo SAKODA¹

1. Department of Neurology, Osaka University Graduate School of Medicine

2. Department of Molecular and Cellular Biochemistry, University of Kentucky

G34 **A new glycoproteomic method for characterizing peptide and glycan moieties of glycopeptides**

Michiko TAJIRI^{1,3}, Shumi YOSHIDA^{2,3}, Yoshinao WADA^{1,2,3}

1. Japan Science and Technology Agency, CREST

2. Osaka Medical School Graduate School of Medicine

3. Osaka MCHRI

16:40~17:00 Closing Lecture and Remark

CR **Developing MS-based diagnostics: a brief report of HUPO Initiative, HGPI**

Yoshinao WADA

Osaka MCHRI