# Program

## September 18 (Tuesday)

### 9:20 ～ 9:30　Opening Remarks

The 25th Annual Meeting of the Japanese Society of Immunotoxicology

President: Keiko Nohara

The 74th Meeting of Allergy and Immunotoxicology study group of Japan Society for Occupational Health

Coordinator: Takahiko Yoshida

### 9:30 ～ 11:00　Oral Presentations　<O-01　～　O-06>

Chairpersons: Seishiro Hirano (National Institute for Environmental Studies)

Etsushi Kuroda (National Institutes of Biomedical Innovation, Health and Nutrition)

**O-01　Altered expression of autophagy-related genes in human monocytes exposed to titanate nanosheets**

○Yasumitsu Nishimura[1], Daisuke Yoshioka[2], Naoko Kumagai-Takei[1], Suni Lee[1], Kei Yoshitome[1], Takemi Otsuki[1]

[1] Department of Hygiene, Kawasaki Medical School,

[2] Department of Natural Sciences, Kawasaki Medical School.

**O-02　Macrophage recognition of silica particles**

○Masafumi Nakayama[1,2], Misato Tsugita[1], Nobuyuki Morimoto[3], and Kengo Kinoshita[4,5]

[1] Frontier Research Institute for Interdisciplinary Sciences, Tohoku Univ,

[2] PRESTO, Japan Science and Technology Agency,

[3] Department of Materials Processing, Graduate School of Engineering, Tohoku Univ,

[4] Graduate School of Information Sciences, Tohoku Univ, [5] Tohoku Medical Megabank Organization.

**O-03　The assessment of immunotoxicity using *in vitro*-differentiated alveolar macrophages, and its future prospects**

○Etsushi Kuroda[1,2,3], Ken J Ishii[1,2]

[1] Center for Vaccine and Adjuvant Research, National Institutes of Biomedical Innovation, Health and Nutrition, [2] Dept. Vaccine Science, Immunology Frontier Research Center, Osaka Univ.,

[3] PRESTO, Japan Science and Technology Agency.

**O-04　Role of macrophage subtypes in thymus atrophy of zinc-deficient rats and effects of IL-4 administration**

○Kido Takamasa, Yanagisawa Hiroyuki

Department of Public Health and Environmental Medicine, Jikei University School of Medicine

O-05 **Oral administration of bisphenol A directly exacerbates allergic airway inflammation but not allergic skin inflammation in mice**

○Risako Tajiki, Emi Makino, Yuko Watanabe, Hitoshi Tajima, Tomoki Fukuyama
The Institute of Environmental Toxicology

O-06 **IL-17-induced mRNA stabilization dictates the expression level of IκB-ζ in keratinocytes**

○Ryuta Muromoto, Yui Ohgakiuchi, Yuka Saino, Ami Sato, Keisuke Tawa, Tadashi Matsuda
Department of Immunology, Faculty of Pharmaceutical Sciences, Hokkaido University

11:10 ～ 12:00 Young Scientists Session <Y-01 ～ Y-09>

Chairpersons: Yoshiro Saito (National Institute of Health Sciences)
Eiko Koike (National Institute for Environmental Studies)

Y-01 **CpG-ODN contributes to flucloxacillin-induced acute liver injury through FasL/Fas mediated pathway**

○Yuying Gao, Shigeki Aoki, Binbin Song, Akinori Takemura, Kousei Ito
Laboratory of Biopharmaceutics, Graduate School of Pharmaceutical Sciences, Chiba University

Y-02 **nSP50-inducible hepatic damages would worsen via acquired immune system**

○Shun-ichi Eto[1,2], Kazuma Higashisaka[1,3], Kenta Sato[1], Aoi Koshida[1], Kazuya Nagano[1], Yasuo Tsutsumi[1,4]
[1] Laboratory of Toxicology and Safety Science, Grad. Sch. Pharm. Sci., Osaka Univ.,
[2] Interdisciprinary Program for Biomedical Sciences, Osaka Univ.,
[3] Department of Legal Medicine, Osaka Univ. Grad. Sch. Med.,
[4] The Center of Advanced Medical Engineering and Informatics, Osaka Univ.

Y-03 ***In silico* approach for structural analysis of HLA complexes associated with idiosyncratic drug toxicities**

○Kenji Watanabe[1], Shigeki Aoki[1], Takahiro Goto[2], Liang Qu[3], Tyuji Hoshino[3], Kousei Ito[1]
[1] Laboratory of Biopharmaceutics, Graduate School of Pharmaceutical Sciences, Chiba University
[2] Drug Metabolism and Pharmacokinetics Research Laboratories, Sohyaku. Innovative Research Division, Mitsubishi Tanabe Pharma Co., Ltd.
[3] Department of Physical Chemistry, Graduate School of Pharmaceutical Sciences, Chiba University

Y-04 **Prediction method of HLA-polymorphism dependent drug hypersensitivity using phage display technology**

○Tomohiro Shirayanagi[1], Shigeki Aoki[1], Tetsuo Aida[2], Makoto Hirasawa[3], Kousei Ito[1]
[1] Laboratory of Biopharmaceutics, Graduate School of Pharmaceutical Sciences, Chiba University
[2] Medicinal Safety Research Laboratories, Daiichi Sankyo Co., Ltd.
[3] Drug Metabolism & Pharmacokinetics Research Laboratories, Daiichi Sankyo Co., Ltd.

Y-05 **Development of a new skin sensitization test method by real-time RT-PCR**

○Maho Nishikawa[1], Megumi Iwaki[1], Kosuke Tashiro[2], Kouichi Kurose[1]

[1] Tokyo Univ. Marine Sci. & Tech., [2] Kyusyu Univ.

Y-06 **Facilitated antigen sensitization on the skin by triacylglycerol in an FITC-induced contact hypersensitivity mouse model**

○Masato Tsutsumi, Kota Sekiguchi, Erina Ogawa, Kohta Kurohane, Yasuyuki Imai

Lab. Microbiology and Immunology, School of Pharmaceutical Sciences, University of Shizuoka

Y-07 **Subacute oral administration of folic acid elicits anti-inflammatory response in a mouse model of allergic dermatitis**

○Emi Makino, Tomoki Fukuyama, Yuko Watanabe, Risako Tajiki, Hitoshi Tajima, Aya Ohnuma-Koyama, Naofumi Takahashi, Ryoichi Ohtsuka, Yoshimasa Okazaki

The Institute of Environmental Toxicology

Y-08 **Direct activation of aryl hydrocarbon receptor displays pro-inflammatory responses in a mouse model of allergic dermatitis**

○Hitoshi Tajima, Yuko Watanabe, Risako Tajiki, Tomoki Fukuyama

The Institute of Environmental Toxicology

Y-09 **Immunotoxicity evaluation by subchronic oral administration of clothianidin in SD rats**

○Kanoko Ohnaru, Shuji Ohno, Toshifumi Yokoyama, Nobuhiko Hoshi

Laboratory of Animal Molecular Morphology, Graduate School of Agricultural Science, Kobe University

12:10 ～ 13:00 Luncheon Seminar 1 (Covance Japan Co., Ltd.)

LS-01 **Nonclinical Assessment of Immuno Oncology Drugs**

○Shawn Heidel

Global Safety Assessment, Metabolism and Lead Optimization, Covance Laboratories, Inc.

13:05 ～ 13:50 General Assembly

14:00 ～ 14:50 Master's Lecture

Chairperson: Keiko Nohara (National Institute for Environmental Studies)

EL-01 **Immune modulation by epigenetic modification of regulatory Tregs**

○Akihiko Yoshimura, Hiroko Nakatsukasa, Hidenori Kasahara

Department of Microbiology and Immunology, Keio University School of Medicine

15:00 ～ 17:00　Symposium　「Gut microbiota and immune diseases - A new perspective on immunotoxicology」

Chairpersons: Rie Yanagisawa (National Institute for Environmental Studies)
Tomoki Fukuyama (The Institute of Environmental Toxicology)

**S-01　Association between gut microbiota and environmental chemicals**

○Rie Yanagisawa
Center for Health and Environmental Risk Research, National Institute for Environmental Studies

**S-02　Relation between gut microbiome and allergic diseases in childhood: clinical perspective**

○Naoki Shimojo
Department of Pediatrics, Graduate School of Medicine, Chiba University

**S-03　Involvement of epithelial indigenous flora in allergy and inflammation**

○Akira Shibuya[1,2]
[1] Life Science Center for Survival Dynamics, TARA, Tsukuba University,
[2] Department of Immunology, Faculty of Medicine, Tsukuba University.

**S-04　Microbiota in immune disorders**

○Kiyoshi Takeda
Graduate School of Medicine, Immunology Frontier Research Center, Osaka University

17:05 ～ 17:55　Poster Discussion Session　<Y-01 ~ Y-09, P-01 ~ P-17>
(Posters for Young Scientists Session <Y-01 ~ Y-09> are also included in this session)

**P-01　Evaluation of chemical-specific IgG antibodies in male workers from a urethane foam factory**

○Mayumi Tsuji[1], Yasuhiro Ishihara[2], Toyohi Isse[1], Chihaya Koriyama[3], Megumi Yamamoto[4], Rie Tanaka[1], Toshihiro Kawamoto[1]
[1] Department of Environment Health, University of Occupational and Environmental Health,
[2] Laboratory of Molecular Brain Science, Graduate School of Integrated Arts and Sciences, Hiroshima University,
[3] Department of Epidemiology and Preventive Medicine, Kagoshima University Graduate School of Medical and Dental Sciences,
[4] Department of Environment and Public Health, National Institute for Minamata Disease.

**P-02 Effects of age and radiation on serum iron and intracellular ROS ($H_2O_2$) in blood of atomic-bomb survivors**

○Tomonori Hayashi[1], Kyoji Furukawa[2], Kengo Yoshida[1], Yoichiro Kusunoki[1], Seishi Kyoizumi[1], Waka Ohishi[3]

[1] Departments of Molecular Biosciences, Radiation Effects Research Foundation,

[2] Biostatistics Center, Kurume University,

[3] Clinical Studies, Radiation Effects Research Foundation.

**P-03 Sulforaphane suppresses cell growth and collagen expression of keloid fibroblasts**

○Mano Horinaka[1], Ayako Kawarazaki[1,2], Shusuke Yasuda[1], Toshiaki Numajiri[2], Kenichi Nishino[2], Toshiyuki Sakai[1]

[1] Dept. Mol.-Target. Cancer Prev., Kyoto Pref. Univ. Med.,

[2] Dep. Surg., Div. Plas. Reconstr. Surg., Kyoto Pref. Univ. Med.

**P-04 Analysis of risk management plans on immunogenicity of biotechnology-derived pharmaceuticals**

○Yoshiro Saito[1], Ryosuke Nakamura[1], Hiroko Shibata[2], Akiko Ishii-Watabe[2]

[1] Division of Medicinal Safety Science, National Institute of Health Sciences,

[2] Division of Biological Chemistry and Biologicals, National Institute of Health Sciences.

**P-05 Method development and validation of anti-drug antibody assay for therapeutic proteins**

○Akiko Ishii-Watabe[1], Kazuko Nishimura[1], Hiroko Shibata[1], Hiroki Wakabayashi[2], Tamiki Mori[2], Takahiro Nakamura[3], Tatsuki Nomura[3], Tetsu Saito[4], Kyoko Minoura[4], Muneo Aoyama[5], Jun Hosogi[6], Masako Soma[7], Kenta Kadotsuji[8], Kazuhiro Nishimiya[9], Norihisa Sakamoto[10], Noriko Katori[1], Yoshiro Saito[1]

[1] National Institute of Health Sciences, [2] LSI Medience, [3] Shin Nippon Biomedical Laboratories,

[4] Astellas Pharma, [5] Eisai, [6] Kyowa Hakko Kirin, [7] Daiichi Sankyo, [8] Sumitomo Dainippon Pharma,

[9] Chugai Pharmaceutical, [10] Tachikawa Chuo Hospital

**P-06 Effect of aromatic antiepileptic drugs on the peptide repertoire of HLA-B*15:02**

○Ryosuke Nakamura[1], Yoshimi Okamoto-Uchida[1], Noriaki Arakawa[1], Noritaka Hashii[2], Yumiko Matsuzawa[1], Akiko Ishii[2], Yoshiro Saito[1]

[1] Division of Medicinal Safety Science, National Institute of Health Sciences,

[2] Division of Biological Chemistry and Biologicals, National Institute of Health Sciences.

**P-07 Fine structure in formation of rods and rings structure (RR) induced by ribavirin and methotrexate (MTX)**

○Tamii Nakashima[1], Shin Tanaka1,Minoru Satoh[2]

[1] Dept. of Human, Information and Life Sciences, School of Health Sciences,

[2] Dept. of Clinical Nursing University of Occupational and Environmental Health.

**P-08 The ROS independent mechanisms of suppression of cell proliferation in A20 cells by arsenite exposure**

○Kazuyuki Okamura, Takehiro Suzuki, Keiko Nohara

Center for Health and Environmental Risk Research, National Institute for Environmental Studies

**P-09 Increased NNT (nicotinamide nucleotide transhydrogenase) in human T cell MT-2 sub cell line continuously exposed to asbestos fibers suppressed asbestos inducing ROS production**

○Shoko Yamamoto[1], ○Suni Lee[1], Hidenori Matsuzaki[2], Tamayo Hatayama[1], Naoko Kumagai-Takei[1], Kei Yoshitome[1], Yasumitsu Nishimura[1], Takemi Otsuki[1]

[1] Department of Hygiene, Kawasaki Medical School,

[2] Department of Life Sciences, Prefectural Univ. Hiroshima.

**P-10 Evaluation of rat peritoneal mesothelioma of chrysotile and forsterite using p16 FISH**

○Toshiaki Hitomi[1], Ayako Takata[1], Yang Cao[1], Masahito Aminaka[2], Hiroshi Yamauchi[1]

[1] Department of Preventive Medicine, St. Marianna University School of Medicine,

[2] Kurashiki Sakuyo University.

**P-11 Identification of responsible components for respiratory and immune diseases exacerbated by ambient particulate matter**

○Michitaka Tanaka[1], Toshinori Onishi[1,2], Akiko Honda[1], Pratiti H Chowdhury[1], Hitoshi Okano[1], Tomoaki Okuda[3], Shuichi Hasegawa[4], Takayuki Kameda[5], Susumu Tohno[5], Masahiko Hayashi[6], Chiharu Nishita-Hara[6], Keiichiro Hara[6], Kozo Inoue[7], Hirohisa Takano[1]

[1] Grad Sch of Eng, Kyoto Univ, [2] Kyoto Pref Univ of Medicine, [3] Keio Univ,

[4] Center for Environ Sci in Saitama, [5] Grad Sch of Energy Sci, Kyoto Univ, [6] Fukuoka Univ,

[7] Tokyo Dylec Corp.

**P-12 LPS levels adherent to PM2.5 is an important factor for particulate matter induced-immunosuppressive effects in splenocytes**

○Yasuhiro Yoshida[1], Cuiying He[1], Takamichi Ichinose[2], Kentaro Morita[1]

[1] Department of Immunology and Parasitology, University of Occupational and Environmental Health,

[2] Department of Health Sciences, Oita University of Nursing and Health Sciences.

P-13 **Decabromodiphenyl ether alters immune responses in obese mice and in adipocyte-macrophage coculture**

○Eiko Koike[1], Rie Yanagisawa[1], Tin Tin Win Shwe[1], Hirohisa Takano[2]

[1] National Institute for Environmental Studies, [2] Kyoto University.

P-14 **Gene expression profiles of nuclear receptor agonists in human macrophage-like THP-1 cells**

○Hiroyuki Kojima[1], Shinji Takeuchi[1], Ryuta Muromoto[2], Reiko Kishi[3], Atsuko Araki[3]

[1] Hokkaido Institute of Public Health, [2] Graduate School of Pharmaceutical Sciences, Hokkaido University,

[3] Center for Environmental and Health Sciences, Hokkaido University

P-15 **Involvement of estrogen receptor α in pro-pruritic and pro-inflammatory responses in a mouse model of allergic dermatitis**

Yuko Watanabe, Emi Makino, Risako Tajiki, Hitoshi Tajima, Aya Koyama, ○Tomoki Fukuyama

The Institute of Environmental Toxicology

P-16 **Contribution of Estrogen receptor α and β to development of allergic airway inflammation in mice - a possible link via IL-33**

○Yuko Watanabe, Risako Tajiki, Hitoshi Tajima, Tomoki Fukuyama

The Institute of Environmental Toxicology

P-17 **Alterations of immunological markers in the brain of rats prenatally exposed to valproic acid**

○Tin-Tin Win-Shwe[1], Hidehiro Watanabe[2]

[1] Center for Health and Environmental Risk Research, National Institute for Environmental Studies,

[2] Center for Environmental Measurement and Analysis, National Institute for Environmental Studies.

18:30 ～ 20:30 Banquet and Award Ceremony for Young Scientists
(Hotel Grand Shinonome)

## September 19 (Wednesday)

9:00 ～ 10:00　Oral Presentations　<O-07　～　O-10>

Chairpersons: Yasuo Yoshioka (Research Institute for Microbial Diseases, Osaka University)
Ryosuke Nakamura (National Institute of Health Sciences)

**O-07　Tumoricidal effect of palmitic acid through the regulation of myeloid-lineage cells**

○Masashi Tachibana[1,2,3], Naosuke Morikawa[1], Hiroshi Goda[1], Kyoko Tomita[1], Fuminori Sakurai[1], Kouji Kobiyama[4,5], Ken J. Ishii[4,5], Shizuo Akira[6,7], Hiroyuki Mizuguchi[1,3,8]

[1] Biochemistry and Molecular Biology, Graduate School of Pharmaceutical Sciences, Osaka Univ,

[2] Vaccine and Immune Regulation, Graduate School of Pharmaceutical Sciences, Osaka Univ,

[3] The Center of Advanced Medical Engineering and Informatics, Osaka Univ,

[4] Laboratory of Adjuvant Innovation, Center for Vaccine and Adjuvant Research (CVAR), National Institute of Biomedical Innovation, Health and Nutrition (NIBIOHN),

[5] Laboratory of Vaccine Science, Immunology Frontier Research Center (IFReC), Osaka Univ,

[6] Laboratory of Host Defense, Immunology Frontier Research Center (IFReC), Osaka Univ,

[7] Department of Host Defense, Research Institute for Microbial Diseases, Osaka Univ,

[8] Hepatocyte Regulation, National Institute of Biomedical Innovation, Health and Nutrition (NIBIOHN).

**O-08　Creation of dendritic cell-targeting peptides as vaccine delivery vehicle**

Kazuki Misato[1], Taiki Aoshi[1,2], Michiko Fukuda[3], ○Yasuo Yoshioka[1,2,4]

[1] Vaccine Creation Project, Research Institute for Microbial Diseases, Osaka Univ,

[2] Vaccine Dynamics Project, Research Institute for Microbial Diseases, Osaka Univ,

[3] The National Institute of Advanced Industrial Science and Technology,

[4] The Center of Advanced Medical Engineering and Informatics, Osaka Univ.

**O-09　Vaccine safety evaluation using human peripheral blood mononuclear cells and humanized mouse**

○Eita Sasaki[1], Haruka Momose[1], Hideki Asanuma[2], Keiko Furuhata[1], Takuo Mizukami[1], Isao Hamaguchi[1]

[1] Department of Safety Research on Blood and Biological Products, National Institute of Infectious Disease, [2] Influenza Virus Research Center, National Institute of Infectious Diseases.

**O-10　Hydroxypropyl-β-cyclodextrin (HP-β-CD) as IL-33 inducer in the lung**

Kobari Shingo[1], ○Takato Kusakabe[1,2], Etsushi Kuroda[1,2], Ken J Ishii[1,2]

[1] Laboratory of Adjuvant Innovation, Center for Vaccine and Adjuvant Research (CVAR), National Institute of Biomedical Innovation, Health and Nutrition (NIBIOHN),

[2] Laboratory of Vaccine Science, Immunology Frontier Research Center (IFReC), Osaka University.

## 10:00 ～ 10:40　International Session　<I-01, I-02>

Chairperson:  Tin Tin Win Shwe (National Institute for Environmental Studies)

**I-01**　**Arsenic exposure and Th2-driven immunotoxicity**

○Khaled Hossain[1], Seiichiro Himeno[2]

[1] Department of Biochemistry and Molecular Biology, University of Rajshahi,

[2] Laboratory of Molecular Nutrition and Toxicology, Faculty of Pharmaceutical Sciences, Tokushima Bunri University.

**I-02**　**Serum C-reactive protein and alpha-fetoprotein concentrations in human subject with cirrhosis or hepatocellular carcinoma**

○Myint Myint Nyein[1], Phyo Zaw Min[2]

[1] University of Medicine 1, Yangon, [2] University of Medicine 2, Yangon.

## 10:50 ～ 11:40　Special Lecture

Chairperson:  Keiko Nohara (National Institute for Environmental Studies)

**SL-01**　**Developmental exposure alters cellular processes critical for T cell functions, and affects some T cell properties across generations**

○B. Paige Lawrence

Department of Environmental Medicine, Environmental Health Science Center, University of Rochester School of Medicine & Dentistry

## 11:50 ～ 12:40　Luncheon Seminar 2 (Charles River)

**LS-02**　**Implementing Pharmacology and Pharmacodynamic Endpoints in Non-Human Primate Studies**

○Christina M. Satterwhite

Global Laboratory Sciences, Charles River

## 12:40 ～ 13:35　Award Ceremony and Lectures

Chairperson: Seiichiro Himeno (Tokushima Bunri University)

### Lecture for the JSIT Award

**AL-01**　**Immunotoxicological evaluation of food allergens**

○Reiko Teshima

Faculty of Veterinary Medicine, Okayama University of Science

### Lecture for the JSIT Research Award

AL-02 **Promotion of Developmental ImmunoToxicology (DIT) assessment and Adverse Outcome Pathway (AOP)**

○Kiyoshi Kusima[1,2]

[1] Astellas Pharma Inc, Drug Safety Research Labs., [2] Astellas Research Institute of America

13:45 ～ 15:45 Workshop: 「Development of cancer immunotherapy and safety assessment of immune checkpoint inhibitors」

Chairpersons: Shigeru Hisada (ASKA Pharmaceutical Co., Ltd.)
Tetsuo Aida (DAIICHI SANKYO Co., Ltd.)

WS-01 **Guidances for Development of Cancer Immunotherapy**

○Hiroshi Shiku

Department of Immuno-GeneTherapy/Personalized Cancer Immunotherapy Mie Univ

WS-02 **Nonclinical assessment of CTLA-4 and PD-1 inhibitors for predicting adverse events in clinical studies**

○Kazuhiko Taguchi

Translational Research, Japan Medical & Development, Bristol-Myers Squibb K.K.

WS-03 **Autoantibodies as biomarkers for predicting risk to develop autoimmune diseases following treatment with immune checkpoint inhibitors**

○Minoru Satoh[1], Takanobu Jotatsu[2], Tomoko Hasegawa[1], Shin Tanaka[3], Kazuhiro Yatera[2]

[1] Department of Clinical Nursing,

[2] Department of Respiratory Medicine, University of Occupational and Environmental Health.

WS-04 **Panel discussion**

15:50 ～ 16:30 Poster Discussion Session <Y-01 ~ Y-09, P-01 ~ P-17>
(All posters are presented in this session)

16:35 ～ 16:45 Award Ceremony “The Best Presenter Award”
Closing Remarks