

## Annual Meeting

### The 17th Annual Meeting of JSIT

#### Invited Plenary Lecture

Mast cells and their regulation: Allergy, but so much more – Innate to adaptive immunity"	A. Dean Befus, Tae Chul Moon, Yokananth Sekar, Chris St. Laurent, Tsuyoshi Yoshimura, Candy Marcet, Shinji Takeuchi, Katherine Morris.	Pulmonary Research Group, School of Internal Medicine, University of Alberta, Canada
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#### Special Lecture

Molecular mechanisms underlying pathogen sensing in the innate immune system	Kensuke Miyake	The Institute of Medical Science, The University of Tokyo
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#### Master's Lecture

Allergenicity testing: current and future issues	Jun-ichi Sawada	Pharmaceuticals and Medical Devices Agency, Tokyo, Japan
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#### Symposium "Immunotoxicity and chemical susceptibility"

Influenza viral disease: Dexamethasone and the role of age and genetics on viral disease	Gary R. Burleson	BRT-Burleson Research Technologies, Inc, USA
Responses of macrophages against oxidative stress- roles of transcription factor Nrf2 and the induced proteins	Tetsuro Ishii, Toru Yanagawa, Eiji Warabi	Majors of Medical Sciences, Graduate School of Comprehensive Human Sciences, University of Tsukuba

Effects of volatile organic compounds (VOCs) exposure on immunotoxicity in mice	Naoki Kunugita (1), Yasuhiro Yoshida (2), Win Shwe Tin Tin (3), Keiichi Arashidani (2), Hidekazu Fujimaki (3)	(1) Department of Environmental Health, National Institute of Public Health, Wako, Japan, (2) University of Occupational and Environmental Health, Kitakyushu, Japan, (3) Research Center for Environmental Risk, National Institute for Environmental Studies, Tsukuba, Japan
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Yellow sand and allergy	Takamichi Ichinose (1), Masataka Nishikawa (2), Hirohisa Takano (3)	(1) Department of Health Sciences, Oita University of Nursing and Health Sciences, Oita, Japan, (2) Laboratory of Intellectual Fundamentals for Environmental Studies, National Institute for Environmental Studies, Tsukuba, Japan, (3) Environmental Health Sciences Division, National Institute for
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Environmental Studies, Tsukuba,  
Japan

Effect of chemicals like  
brominated flame  
retardants (BFRs) on the  
development of the  
immune system in  
rodents

Reiko Teshima, Ryosuke  
Nakamura

The Division of Novel Foods and  
Immunochemistry, National  
Institute of Health Sciences

Workshop "The latest move in the immunotoxicity studies: in silico, in vitro and in vivo"

In silico prediction of  
immunogenicity: sense  
and non-sense

Philippe Stas

Applied Protein Services, Lonza  
Biologics.

Current situation of in  
vitro testings on skin  
sensitisation assay

Hajime Kojima

Japanese Center for the  
Validation of Alternative  
Methods, National Institute of  
Health Sciences

The inter-laboratory KLH-  
TDAR assay validation  
study (Study I) –  
investigation for the  
experimental conditions –

Kanako Mori (1),  
Yasuhide Kouchi (2), Ai  
Hashimoto (3), Hideki  
Harada (4), Ryota  
Kawai (5)

(1) Development Research  
Center, Takeda Pharmaceutical  
Company Limited, (2) Toxicology  
Lab., Tokushima Research  
Center, Taiho Pharmaceutical  
Co., Ltd., (3) Discovery  
Technology Laboratories, Minase  
Research Institute, Ono  
Pharmaceutical Co. Ltd., (4)  
Safety Assessment Department,  
Non-clinical Research Center,  
Drug Development Service  
Segment, Mitsubishi Chemical  
Medicine Corporation, (5)  
Medicinal Safety Research  
Laboratories, Daiichi Sankyo Co.,  
Ltd.

The inter-laboratory KLH-  
TDAR assay validation  
study II- investigation  
using an  
immunosuppressive  
agent –

Yota Kawai (1), Yuko  
Nagayama (2), Kanako  
Mori (3), Yasuhide  
Kouchi (4)

(1) Medicinal Safety Research  
Laboratories, Daiichi Sankyo Co.,  
Ltd., (2) Tsukuba, Drug Safety  
Japan, Eisai Co., Ltd., (3)  
Development Research Center,  
Takeda Pharmaceutical Company  
Limited, (4) Toxicology Lab.,  
Tokushima Research Center,  
Taiho Pharmaceutical Co., Ltd.

#### Oral Presentations

Particulates activate  
innate immune systems  
and regulate type 2  
immunity

Etsushi Kuroda (1),  
Yasuo Morimoto (2)

(1) Department of Immunology  
and Parasitology, University of  
Occupational and Environmental  
Health, (2) Department of  
Occupational Pneumology,  
University of Occupational and  
Environmental Health

Safety assessment of  
nanomaterials:  
inflammatory responses

Yasuo Yoshioka (1,2,3),  
Tomohiro Morishige (3),  
Hiroshi Inakura (3),

(1) The Center for Advanced  
Medical Engineering and  
Informatics, Osaka University,

of nanosilica with different sizes and surface properties	Tomoaki Yoshikawa (2,4), Shin-ichi Tsunoda (1,2,5), Yohei Mukai (3), Naoki Okada (3), Shinsaku Nakagawa (1,3), Yasuo Tsutsumi (1,2,4)	Osaka, Japan, (2) Laboratory of Biopharmaceutical Research, National Institute of Biomedical Innovation, Osaka, Japan, (3) Department of Biotechnology and Therapeutics, Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan, (4) Department of Toxicology and Safety Science, Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan, (5) Department of Biomedical Innovation, Graduate school of Pharmaceutical Sciences, Osaka University, Osaka, Japan
Functional analysis of peripheral blood CD8+ cells from people positive for pleural plaque	Naoko Kumagai, Yasumitsu Nishimura, Megumi Maeda, Hiroaki Hayashi, Takemi Otsuki	Department of Hygiene, Kawasaki Medical School, Kurashiki, Japan
Analysis of Foxp3 expression and DNA methylation in MT-2 cells exposed to asbestos	Megumi Maeda (1), Hiroaki Hayashi (1), Yasumitsu Nishimura (1), Naoko Kumagai (1), Yoshie Miura (2), Takemi Otsuki (1)	(1) Department of Hygiene, Kawasaki Medical School, Okayama, Japan, (2) Department of Molecular Genetics, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan
Pulmonary toxicity induced by dispersed MWCNT using animal studies	Yasuo Morimoto (1), Masami Hirohashi (1), Akira Ogami (1), Takako Oyabu (1), Toshihiko Myojo (1), Motoi Todoroki (1), Makoto Yamamoto (1), Masayoshi Hashiba (1), Yohei Mizuguchi (1), Byeong Woo Lee (1), Etsushi Kuroda (2), Manabu Shimada (3), Wang Wei-Ning (3), Kazuhiro Yamamoto (4), Katsuhide Fujita (4), Shigehisa Endoh (4), Kunio Uchida (4), Norihiro Kobayashi (4), Junko Nakanishi (4), Isamu Tanaka (1)	(1) IIES, University of Occupational and Environmental Health Japan, Kitakyushu, Japan, (2) Dept of Immunology, School of Medicine, University of Occupational and Environmental Health Japan. Kitakyushu, Japan, (3) Hiroshima University, Hiroshima, Japan, (4) National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan
Altered production of cytokines and decreased monocyte-lineage cells in the relation with decreased NKp46 on NK cells upon exposure to asbestos	Yasumitsu Nishimura, Naoko Kumagai, Megumi Maeda, Hiroaki Hayashi, Takemi Otsuki	Department of Hygiene, Kawasaki Medical School, Kurashiki, Japan

Effects of brominated flame retardants on mouse immune cells	Eiko Koike, Rie Yanagisawa, Hirohisa Takano	Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, Japan
Ziram induces apoptosis and necrosis in human immune cells	Qing Li, Maiko Kobayashi, Tomoyuki Kawada	Department of Hygiene and Public Health, Nippon Medical School, Tokyo, Japan (1) Hokkaido Institute of Public Health, Sapporo, Japan , (2) Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan
Inhibitory effects of pesticides on IL-17 production via retinoid-related orphan receptor	Hiroyuki Kojima (1), Shinji Takeuchi (1), Miki Takahashi (2), Ryuta Muromoto (2)	
In vitro T cell-dependent antibody response assay using mouse splenocytes	Kiyoshi Kushima, Shogo Matsumura, Akihiko Hisatomi, Michio Fujiwara, Jiro Seki	Drug Safety Research Labs., Astellas Pharma Inc., Osaka, Japan
Analysis of human lymphocyte chemotaxis by TAXIScan method	Akira Yamauchi (1), Futoshi Kuribayashi (1), Shiro Kanegasaki (2)	(1) The Department of Biochemistry, Kawasaki Medical School, Kurashiki, Japan , (2) The Central Laboratory, ECI, Inc.
Development of the method for chemical risk assessment based on human leukocytes chemotaxis	Tomoko Tsuchiya, Minoru Ono, Shiro Kanegasaki	Department of Research, ECI, Inc., Tokyo, Japan
Contamination by endotoxin masks the positive immunogenic reaction in helper T-cell proliferation assay	Marie Hayakawa, Chiyomi Kubo, Yoshika Iwata, Shunsuke Ito, Toshiko Hara, Akihumi Shioda, Masayuki Mishima	Fuji Gotemba Res. Labs., Chugai Pharmaceutical Co., Ltd., Gotemba, Japan
Helper T-cell proliferation assay to measure T-cell response to various antibody pharmaceuticals	Chiyomi Kubo, Marie Hayakawa, Shunsuke Ito, Taichi Kuramochi, Yoshika Iwata, Akifumi Shioda, Toshiko Hara, Tomoaki Inoue, Masayuki Mishima	Chugai Pharmaceutical CO., LTD. Fuji Gotemba Research Labs.
Risk assessment of cytokine release syndrome using human peripheral blood cells in vitro	Yoshika Iwata (1), Chiyomi Kubo (1), Marie Hayakawa (1), Shunsuke Ito (1), Toshiko Hara (1), Akifumi Shioda (1), Tomoaki Inoue (1), Masayuki Mishima (1), Manigold Tobias (2), Hinton Heather (2), Kropshofer Harald (2)	(1) Safety Assessment Dept., Fuji Gotemba Res. Labs., Chugai Pharmaceutical Co., Ltd., Gotemba, Japan, (2) Immunosafety, Non-clinical Safety, F Hofmann La-Roche Ltd, Basel, Switzerland
Sensitization study by quantitative structure-activity relationships (QSAR)	Kazuhiro Sato, Yukinori Kusaka	Department of Environmental Health, School of Medicine, University of Fukui, Fukui, Japan

Development of animal model represent exacerbation of childhood allergic dermatitis by	Katsunori Yamaura, Seri Akiyama, Manabu Oda, Eriko Suwa, Koichi Ueno	Department of Geriatric Pharmacology and Therapeutics, Graduate School of Pharmaceutical Sciences, Chiba University
STAT5 is activated by formaldehyde inhalation during pregnancy and infancy.	Yasuhiro Yoshida (1), Ning Ding (1), Naoki Kunugita (2)	(1) Department of Immunology and Parasitology, School of Medicine, University of Occupational and Environmental Health, Kitakyushu, Japan, (2) National Institute of Public Health, Wako, Japan
Effects of oral exposure to $\gamma$ -benzene hexachloride during childhood in allergic airway inflammation	Rie Yanagisawa, Eiko Koike, Hirohisa Takano	National Institute for Environmental Studies, Environmental Health Sciences Division, Tsukuba, Japan
$\beta$ -carotene intake inhibits oral sensitization and affects intestinal mucosal immunity	Hiroshi Akiyama (1), Hideki Matsuoka (1), Kozue Sakata (1), Rika Nakamura (1), Shingo Takahashi (2), Takahiro Inakuma (2), Mamoru Totsuka (3), Reiko Teshima (3)	(1) National Institute of Health Sciences, Tokyo, Japan, (2) Research Institute, KAGOME CO., LTD., Nasushiobara-chi, Japan, (3) The University of Tokyo, Tokyo, Japan
Histological Features and Airway Hyperresponsiveness in Polycyclic Aromatic Hydrocarbons Exacerbated Allergic Reaction in BALB/c mice	Ryoji Hirota (1), Yumei Kang (2), Hiroyuki Nakamura (3), Narufumi Suganuma (1), Katsutoshi Sakurai (2)	(1) Department of Environmental Medicine, Kochi Medical School, Nankoku, Japan, (2) Laboratory of Soil Environmental Science, Kochi University, (3) Kanazawa University Graduate School of Medical Science
Cytokines and tryptophan metabolites changes in mood disorders: Genetic and biochemical aspects	Aye Mu Myint (1), Matthias Rothermundt (2), Michael Riedel (1), Markus Schwarz (1), Stephan Claes (3)	(1) PNI Laboratory, Psychiatric Hospital, Ludwig-Maximilians University, Munich, Germany, (2) Psychiatric Hospital, University of Muenster, Muenster, Germany, (3) Psychiatric Hospital, Catholic University of Leuven, Leuven, Belgium
Poster Presentations		
Prior exposure to organophosphorus and organochlorine compounds increases the allergic potential of chemical allergens	Tomoki Fukuyama, Yukari Tajima, Hideo Ueda, Koichi Hayashi, Yasufumi Shutoh, Tadashi Kosaka, Takanori Harada	The Institute of Environmental Toxicology, Toxicology Division, Ibaraki, Japan
The comparison of immunological effects of Chrysotile and Crocidolite asbestos fibers	Takemi Otsuki, Megumi Maeda, Shoko Yamamoto, Hiroaki Hayashi, Naoko Kumagai, Yasumitsu Nishimura	Department of Hygiene, Kawasaki Medical School, Kurashiki, Japan

Effect of diesel exhaust exposure on allergic reactions in the rat endometriosis model	Masakazu Umezawa (1,2,3), Chika Sakata (1), Masako Tabata (1), Naomi Tanaka (1), Sayaka Kudo (1), Yumi Saito (1), Tomomi Ihara (2), Masao Sugamata (2), Ken Takeda (1,3)	(1) Department of Hygienic Chemistry, Faculty of Pharmaceutical Sciences, Tokyo University of Science, Noda-city, Chiba, Japan, (2) Department of Pathology, Tochigi Institute of Clinical Pathology, Nogi-town, Chiba, Japan, (3) Research Center for Health Sciences of Nanoparticles, Research Institute for Science and Technology, Tokyo University of Science, Noda-city, Chiba, Japan
Effect of postnatal exposure to low-level toluene with peptidoglycan on the development of Th1/Th2 balance in mice	Shoji Yamamoto, Tin-Tin Win-Shwe, Daisuke Nakajima, Hidekazu Fujimaki	Research Center for Environmental Risk, National Institute for Environmental Studies, Tsukuba, Japan
Murine oral food allergy model: Analysis of T cell subpopulations in mucosal lymphoid tissues	Tomoko Shindo (1), Terumi Katori (1), Yukiko Kanazawa (2), Motoyasu Ohsawa (1), Kohichi Kojima (1), Reiko Teshima (3)	(1) Hatano Research Institute, Food and Drug Safety Center, Hadano, Japan, (2) Pharmaceuticals and Medical Devices Agency, Tokyo, Japan, (3) National Institute of Health Sciences, Tokyo, Japan
Mast cells express hormone receptors, but treatment with estrogen exerts no detectable influence on mast cell secretions	Shinji Takeuchi (1,2), Morris Katherine (2), St. Laurent Chris (2), Moon Tae Chul (2), 吉村剛(2), Sekar Yokananth (2), Hiroyuki Kojima (1), Befus Dean (2)	(1) Hokkaido Institute of Public Health, Sapporo, Japan, (2) University of Alberta, Edmonton, Canada
The effect of the maternal consumption of lactic acid bacteria during pregnant and lactating periods on their pregnancy and offspring in mice	Gaku Wagai, Kazuhiko Yoshizawa, Toshihide Kobayashi, Ikuo Kato, Kazumi Uchida	Yakult Central Institute for Microbiological Research
A comparative study of Slc: WistarHannover/Rcc rats and Slc: SD rats on immunotoxicological characteristics	Yoshito Ohnuma, Yasuyuki Maeda	Department of Life & Health Sciences, Teikyo University of Science, Yamanashi, Japan
The alterations in the subsets of splenic lymphocytes among the F1 rats exposed to tributyltin via the placenta and their dams' milk	Masashi Tsunoda (1), Takamasa Kido (1), Ryutaro Ikeuchi (1), Takaya Kaido (1), Mayuko Hosokawa (1,2), Chiemi Sugaya (1), Yuichiro Kudo (1), Koichi Hayashi (3), Tadashi Kosaka (3),	(1) Department of Preventive Medicine and Public Health, Kitasato University School of Medicine, Sagami-hara, Japan, (2) Department of Epidemiology and Environmental Health, Juntendo University School of Medicine, (3) The Institute of Environmental Toxicology, (4)

	Yuki Takeuchi (4), Tomoko Tashiro (4), Yoshiharu Aizawa (1)	Aoyama Gakuin University School of Science and Engineering
The detection of immuno- suppressive effects of DPH or MXC in female mice using Plaque- forming cell (PFC) assay	Koichi Hayashi, Tomoki Fukuyama, Yukari Tajima, Yukiko Kashimoto, Yasufumi Shutoh, Hideo Ueda, Tadashi Kosaka	The Institute of Environmental Toxicology
Cross-reactivity analysis of allergens revealed by EXiLE test	Ryosuke Nakamura (1), Masakazu Higuchi (1), Rika Nakamura (1), Yasuto Kondo (2), Atsuo Urisu (3), Reiko Teshima (1)	(1) Div. Novel Foods Immunochem., Natl. Inst. Health Sci., Tokyo, Japan, (2) Dept. Pediatrics, Fujita Health Univ. Sch. Med., Toyoake, Aichi, Japan, (3) Dept. Pediatrics, The Second Teaching Hospital of Fujita Health Univ., Aichi, Japan
Associations between HLA alleles and Stevens- Johnson syndrome and toxic epidermal necrolysis in Japanese patients (Third report)	Emiko Sugiyama (1,2), Nahoko Kaniwa (1,2), Masahiro Tohkin (1,2), Kouichi Kurose (1,2), Ryuichi Hasegawa (2), Kayoko Matsunaga (2), Yukitoshi Takahashi (2), Hirokazu Furuya (2), Masaaki Muramatsu (2), Chie Sotozono (2), Shigeru Kinoshita (2), Michiko Aihara (2), Zenro Ikezawa (2), Yoshiro Saito (1,2)	(1) Division of Medicinal of Safety Science, National Institute of Health Sciences, Tokyo, Japan, (2) JSCAR Research Group
Immunotoxicity evaluation in rats using T- cell independent antibody response	Shiho Ito, Hiroyuki Hattori, Ryota Kawai, Satomi Komatsu, Keiko Muramatsu, Masae Yagi, Takuya Matsuyama, Tadashi Furukawa, Atsushi Sanbuissho	Medicinal Safety Research Laboratories, Daiichi Sankyo Co., LTD., Shizuoka, Japan
Accuracy of LLNA: BrdU- ELISA to detect skin sensitization potential of chemicals	Masafumi Horiuchi (1), Hideki Miyaura (1), Naoaki Yakata (1), Masahiro Takeyoshi (1), Naomi Kawazu (2), Masanori Taruki (2), Nobuhiko Higashibara (2)	(1) Chemicals Assessment and Research Center, Chemicals Evaluation and Research Institute, Japan, (2) Hita Laboratory, Chemicals Evaluation and Research Institute, Japan
The Comparison of testing Conditions for T cell Dependent Antibody Reaction in Rats	Hiroaki Oka, Mitsuhiro Fujieda, Hiroko Hitotsumachi, Yasuhide Kouchi	Tokushima Research Center, Taiho pharmaceutical Co., Ltd., Japan
Four Week Repeated Dose Oral Immunotoxicity Study of	Makoto Tsunemi, Hideki Tokudome, Takayuki Okamura, Hideki Harada, Yasuyuki	Safety Assessment Department, Mitsubishi Chemical Medience Corporation, Kashima, Japan

Cyclophosphamide and Cyclosporin A in Rats	Ohnishi, Hideaki Hiratsuka	
A New In Vitro Assay System for Assessment of Food Allergenicity (2) Evaluation of Proteins Digested In Vitro	Terumi Katori (1), Tomoko Shindo (1), Motoyasu Ohsawa (1), Kohichi Kojima (1), Reiko Teshima (2)	(1) Hatano Research Institute, Food and Drug Safety Center, Hadano, Japan, (2) National Institute of Health Sciences, Tokyo, Japan
Oral Presentations (Students' Session)		
Change in expression pattern of human $\beta$ defensins in mouse tracheal epithelium induced by toluene exposure	Seiko Takeda (1), Tomoichirou Yamaai (2), Nobuyoshi Mizukawa (1), Yoshihiro Kaneda (1), Seiji Iida (1)	(1) Department of Oral and Maxillofacial Reconstructive Surgery, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan., (2) Department of Oral Function and Anatomy, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan
Enhancement of proliferation of splenocytes induced by fullerene nanoparticles instillation	Ning Ding (1), Naoki Kunugita (2), Takamichi Ichinose (3), Yuan Song (1), Keiichi Arashidani (4), Yasuhiro Yoshida (1)	(1) Department of Immunology and Parasitology, UOEH, (2) National Institute of Public Health, (3) Oita University of Nursing and Health Sciences, (4) School of Health Sciences, UOEH
Mechanism of the suppression of lymphocyte proliferation through an increase in p130 by inorganic arsenic	Kazuyuki Okamura (1,2), Daisuke Miki (1,2), Keiko Nohara (1,2)	(1) Environmental Health Sciences Division, National Institute for Environmental Studies, Tsukuba, Japan, (2) Graduate School of Life and Environmental Sciences, Tsukuba University, Tsukuba, Japan
The mechanism for regulating the interleukin-6 in exposure to manganese	Masashi Asao, Daigo Sumi, Seiichiro Himeno	Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Tokushima, Japan
Luncheon Seminar		
Impact of the addendum to ICH S6 on the usage of tissue cross-reactivity studies in the pre-clinical development of antibody-based biopharmaceuticals	Curtis Chan	Special Pathology Services, Charles River Laboratories, Preclinical Services, USA
Therapeutic monoclonal antibodies - Predicting antibody-mediated cytokine release	Christopher Kirton	Experimental Biology, Huntingdon Life Sciences UK