

English pages

Young power for immunotoxicological research

Food and Immunity

Terumi Katori

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My graduate studies had been started by a research on the effect of feeding behavior and light-dark cycle on immune cell populations in blood of mice. It was shown in this research that all of B, T and NK cell populations in blood were increased by feeding, and that the variation of B and NK cells except T cells was synchronized with the reversed light-dark cycle. It was extended to investigate the effect of some phyto-materials on behavioral indicators for learning and memory and on immune cell balance in Senescence-accelerated mice (SAM). As the result some phyto-materials were found to prevent the SAM mice from declining of behavioral activities and immune depression with aging.

Now in the Hatano Research Institute, I am engaged in the study about developing an in vitro assay system for assessment of food allergenicity using Peyer's patch cells. I will make an effort to the utmost so as to be like research experts in immunology and toxicology.

The 17th Annual Meeting of the Japanese Society of Immunotoxicology (JSIT2010)

September 9-10, 2010

Ohyama Memorial Hall

National Institute for Environmental Studies

Tsukuba, Ibaraki 305-8506 Japan

Organizing Committee of the 17th Annual Meeting of JSIT

URL <http://jsit2010.umin.ne.jp>

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The theme of the upcoming meeting is
“**Immunotoxicology and Susceptibility**”

Program (Tentative Schedule)

■ September 9, 2010 (Thursday)

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| 9:00 | Registration |
| 9:40 | Opening Remark |
| 9:50-18:00 | Poster Presentations |
| 9:50-11:05 | Oral Presentations |
| 11:10-12:10 | Invited Plenary lecture
: “Mast cells: Integral to the expression of innate and acquired immunity” (Prof. A. D. Befus, Univ. of Alberta, CANADA) |
| 12:15-13:00 | Luncheon Seminar 1: Charles River Laboratories |
| 13:05-13:45 | General Assembly |
| 13:50-15:50 | Symposium: “Immunotoxicity and chemical susceptibility”
Dr. Gary R. Bureson (BRT-Bureson Research Technologies, Inc.)
「Influenza viral disease: Dexamethasone and the role of age and genetics on viral disease severity」
Dr. Tetsuro Ishii (University of Tsukuba)
「Oxidative stress-induced responses in macrophages: roles of transcription factor Nrf2 and induced proteins.」
Dr. Naoki Kunugita (National Institute of Public Health) 「Effects of volatile organic compounds (VOCs) exposure on immunotoxicity in mice」
Dr. Takamichi Ichinose (Oita University of Nursing and Health Sciences) 「Asian sand dust and allergy」
Dr. Reiko Teshima (National Institute of Health Sciences) 「Effect of chemicals like brominated flame retardants on the development of the immune system in rodents」 |
| 15:55-16:55 | Oral Presentations |

17:00-18:00 Special Lecture: "Molecular mechanisms underlying pathogen sensing in the innate immune system" Prof. Kensuke Miyake (The Institute of Medical Science, The University of Tokyo)

18:30-20:30 Reception (Chateau Kamiya)

■ September 10, 2010 (Friday)

8:40 Registration

9:00-13:45 Poster Presentations

9:10-10:00 Oral Presentations (Student session)

10:05-11:20 Oral Presentations

11:25-12:10 Master's Lecture: "Allergenicity testing: current and future issues"

Dr. Jun-ichi Sawada (Pharmaceuticals and Medical Devices Agency)

12:15-13:00 Luncheon Seminar 2: Huntingdon Life Sciences

13:05-13:45 Poster Discussion

13:50-15:05 Oral Presentations

15:10-17:10 Workshop

(Organized by Drs. E. Maki and Y. Kouchi)

17:10-17:15 Awards Ceremony

17:15-17:20 Closing Remarks

Ozone and Immunotoxicity

Hidekazu Fujimaki

(National Institute for Environmental Studies)

Indoor and outdoor pollutants may be associated with health problems. Ozone is one of the outdoor pollutants and it is suggested a positive relationship between low-level ozone exposure and increased incidence of allergic diseases in developed countries.

Little is known about the mechanism of action of ozone to induce allergic responses and its susceptible subpopulation. However, there are rapidly growing evidences suggesting that ozone can modify airway inflammatory responses by disrupting the anti-oxidant mechanism that may regulate the nervous and immune functions.

Here, based on the data from animal experiments, I summarized the role of ozone in the induction of lung injury and airway inflammation and then discussed the susceptibility to toxic chemical exposure and predisposing allergic and infectious diseases. I also consider the possible mechanisms by which ozone exposure can induce the symptoms presenting in patients with airway hyperactivity.

Exposure to an allergen and/or toxic chemical ozone leads to epithelial cell irritation and it triggers cytokine production from these epithelial cells and alveolar macrophages.

In this review, I have highlighted the potential inflammatory mediators that influencing airway hyperreactivity by ozone inhalation and I hope this review, at least in part, help to understand the mechanisms of allergic diseases caused by chemicals around us.

