

Metallomics in Japan

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This is a themed issue of *Metallomics* which presents peer-reviewed papers originating from the 3rd Metallomics Research Forum in Japan held on August 30 and 31, 2012 in Showa Pharmaceutical University, Tokyo. The forum was organized by Professor Yasumitsu Ogra (Showa Pharmaceutical University).

The 1st Metallomics Research Forum in Japan was held in Tokyo in 2008, and it was organized by Professor Shuichi Enomoto (RIKEN, Wako). In the organizing committee meeting, we agreed that the forum would be held in every even year because the International Symposium on Metallomics would be held in every odd year. We think that the schedule is very successful to exchange our knowledge, to encourage young scientists among the domestic and international community of metallomics. The 2nd forum was organized by Professor Hiroyuki Yasui (Kyoto Pharmaceutical University) in Kyoto in 2010. The 4th forum will be held in Tokyo under the chairmanship of Professor Masahiro Kawahara (Musashino University) in 2014.

The scientific program of the 3rd forum included 9 invited talks, 13 oral and 31 poster presentations. More than 80 participants including 3 persons from outside of Japan (China and France) shared the interest in this emerging research area in spite of the lingering summer heat in Tokyo. Two symposia highlighting fundamental and applied fields in metallomics were delivered. Namely, “Advanced Analytical

Techniques in Metallomics” and “Environmental Toxicology and Metallomics” were installed as fundamental and applied topics, respectively. In addition, one vendor's seminar entitled “Principle and application of ICP-triple quadrupole MS in metallomics” was presented by Agilent Technologies. Vendors' exhibitions for the items related to metallomics research such as stable isotopes and a colorimetric kit of metal determination were on view.

We are very grateful for the RSC sponsorship of the forum, and invited Dr May Copsey, Editor of *Metallomics*, to the forum in Tokyo. We also thank Dr Hirofumi Seike, a representative of RSC office in Japan for his participation in the forum. Dr Copsey presented a RSC award for young scientists in the closing ceremony. Two young scientists received this award in recognition of their achievements (Photo 1). Their works are included in this issue.

In this themed issue “Update on Metallomics in Japan,” 11 papers (1 minireview, 9 full papers and 1 communication) are published. The organizing committee encouraged these authors to submit their interesting works. It should be noted that all manuscripts accepted to this themed issue were evaluated by the regular peer review system of RSC. The two awarded young scientists, Dr Kanda and Dr Fujii publish their works entitled “AMP-activated protein kinase-mediated glucose transport as a novel target of tributyltin in human embryonic carcinoma cells” (DOI:10.1039/c3mt20268b) and “Coupling system of capillary gel electrophoresis with inductively coupled plasma-mass spectrometry for the determination of double strand DNA fragment” (DOI:10.1039/c3mt00057e), respectively. Professor Takeda delivers the minireview entitled “Synaptic Zn²⁺ homeostasis and its significance” (DOI:10.1039/c3mt20269k).

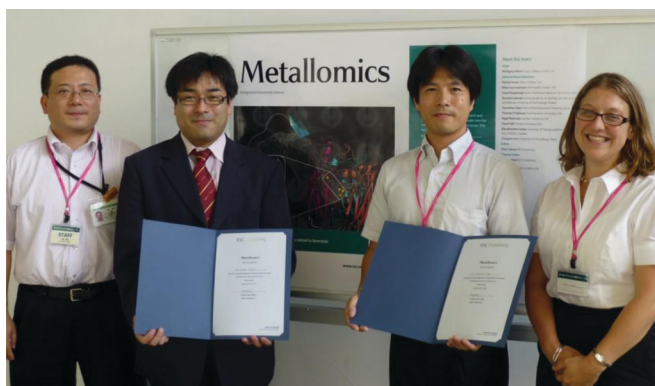


Photo 1. From left: Professor Yasumitsu Ogra, Dr Yasunari Kanda (awardee), Dr Shinichiro Fujii (awardee) and Dr May Copsey.

The collection of full papers gives an impression of the various aspects of metallomics; the toxicology of organoarsenic, the mechanisms for metallodrugs, the utilization of stable isotope as a tracer, metal imaging by X-ray fluorescence, metal transporters, metals/metalloids in a nervous system, and plant metallomics. The topics including these papers were eagerly discussed during the forum.

The field of metallomics has traditionally been strong in Japan, in particular, there are many scientists in the field of metal toxicology because Japan has had two metal pollution-triggered diseases, Minamata disease and Itai-itai disease. In addition, the term “metallomics” was coined by Professor Hiroki Haraguchi in Japan in 2004. We, Japanese researchers, hope that we continuously contribute to the field of metallomics and develop the interdisciplinarity of metallomics among the analytical chemistry, biochemistry, molecular biology, immunology, and toxicology communities.



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