

**Functional Food and Nutrigenomics:
Outlook of the Second-term Action Plans in the ILSI Japan-Endowed Chair
“Functional Food Genomics” at the University of Tokyo**

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< Abstract >

The ILSI Japan endowed chair “Functional Food Genomics” was established in December 2003. It has an aim of industrial contributions through elucidation of the effects of functional foods using DNA microarray analysis as a main methodology. A total of 32 companies participated in the 1st 5-year-term activity: 10 companies with single projects and 19 with multiple projects. The academia-industry collaborative study resulted in publicized 50 original-plus-review papers in high impact journals and presenting almost 200 oral-plus-poster papers in national and international meetings.

Against this backdrop the following items are proposed as to action plans for the 2nd 5-year-term which starts in December 2008.

1. Extending the first-term studies on functional food genomics, particularly on t-statistic details including data mining and summarization, statistically significant gene extraction, false discovery rate (FDR) detection and gene ontology.
2. DNA microarray analysis of human blood samples as a step to clinical intervention tests on functional foods.
3. Enlarging the academia-industry collaborative studies by setting new projects on functional foods.
4. Developing transcriptomics to proteomics and metabolomics in particular and even to omics in general.
5. Aspects on safety as well as functionality of foods are added especially by taking into consideration the problem of over-eating.
6. If possible, the endowed-chair attempts to explore a new “made-to-order food” research area in considering genetic individual differences.

In the near future it is also attempted to establish “International Functional Food Research Center” (tentative) with the endowed-chair as a pilot, for the purpose of publicizing the Japanese lead in this scientific field.