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Newsletter November 2011

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People

Professor Hiromitsu **NAKAUCHI**, The University of Tokyo

<http://stemcell-u-tokyo.org/en/>



Professor NAKAUCHI studied medicine at Yokohama City University and graduated there in 1978. After further training in internal medicine, he moved to the University of Tokyo Graduate School of Medicine where he obtained his Dr degree.

From 1983-1985, he was a research fellow at Stanford University, Department of Medical Genetics and moved on as Assistant and Lecturer to Juntendo University, Medical Department, Immunological Research. From 1987-1995, he became team leader at RIKEN's

International Frontier Research Program, and was nominated Professor for Immunology at the University of Tsukuba in 1993. In 2002, he accepted an assignment by the University of Tokyo, Institute of Medical Sciences and started to specialize in hematology and stem cell research. Since 2008 he is Director of the Stem Cell Therapy Research Center there.

In 2007, he was awarded the distinction of an ERATO project ("NAKAUCHI stem cell and organ regeneration project"), http://www.jst.go.jp/erato/project/nks_P/nks_P.html He is visiting professor at Stanford University and at Ulm University.

In September 2011, he started a company, jointly with Kyoto University's Prof. Shinya

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YAMANAKA, producing artificial human blood platelets based on iPS technology. The technology is based on his own results and on IP of the iPS Cell Laboratory of Kyoto University. President is Mr Shimosaka, former manager of a blood-related medical equipment venture at Kirin Brewery. Capital of the company is 10 million Yen (~ 90 T€) of which 3 million were contributed by Professor Shinya YAMANAKA, a board member of iPS Academia.

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Meetings

BioJapan 2011, Oct. 5-7, Yokohama



Together with BioExpo Japan, held in late June/early July in Tokyo, BioJapan is the largest biotech-related exhibition in Japan. It is organized

by Nikkei Business Publications, Inc., and has strong governmental support.

In 2011, there were about 750 exhibitors (327 companies and associations, 330 SMEs and 62 foreign exhibitors from 13 countries). The number of seminars totaled 49 sessions, the total number of visitors was 8.666, about 1.700 less than at BioJapan 2010.

Company profile

Toyota Central R&D Laboratory, Nagakute, Aichi Prefecture

Toyota Central Engineering is the research center of Toyota Car Company. Established in 1960, it has capital of 3 billion Yen (~ 26,5 million €) and a staff of 1.074. President and COO is Mr Takashi SAITO.



<http://www.tytlabs.co.jp/eindex.html>

The company is active in four areas:

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1. environment, energy and power train (includes enzymes for biomass saccharification)
2. materials and processing (includes biopolymers, e. g., PLA)
3. information, safety/comfort and electronics
4. research on fundamental technology.

Toyota has its own beamline at the world's largest synchrotron radiation facility SPring-8 in Harima, to engage in materials analysis as the backbone of their research.

At BioJapan 2011, Toyota has put a focus on her studies to produce bioethanol from biomass, in particular on raw materials, biomass pretreatment and on enzymatic saccharification of cellulose and hemicelluloses.

As a **raw material**, napier grass (*Pennisetum purpureum*) is a preferred option as it shows rapid growth in tropical areas and is promising in terms of production cost.

In **pretreatment**, high sugar yields at low energy consumption were obtained by combined compression and steam treatment

For **saccharification**, a recombinant yeast was developed which utilizes xylose, shows very little catabolite repression and no inhibition by substrate components.

Future emphasis is put on cost reduction by reducing cellulose addition, energy consumption and greenhouse gases.

Apart from saccharification of biomass, Toyota has active bio-related projects in

- genetic analysis and breeding of sugar cane
- biopolymers, e. g., PLA and bio-polyethylene (cooperation with BRASKEM),
- reforestation projects, and other fields

For more details, visit www.window-to-japan.eu

Toyota Central R&D Labs publishes a web-based quarterly review of activities in English, accessible after registration, see <http://www.tytlabs.co.jp/review/>

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Government

“Food of Specified Health Use” (FOSHU) regulations

FOSHU refers to foods containing ingredient with functions for health and officially approved



to claim its physiological effects on the human body. FOSHU is intended to be consumed for the maintenance / promotion of health or special health uses by people who wish to control health conditions, including blood pressure or blood cholesterol. In order to sell a food as FOSHU, the assessment for the safety of the food and effectiveness of the functions for health is required, and the claim must be approved.

At present, some 900 food products have a FOSHU seal,

<http://www.caa.go.jp/en/pdf/syokuhin338.pdf> As of Sept. 1st, 2009, the Government transferred the duty and right to issue FOSHU approvals to the Consumer Affairs Agency, a body under the State Minister of Consumer Affairs, <http://www.caa.go.jp/en/pdf/caa.pdf>. Since this move, the number of new food products which obtained FOSHU status decreased by nearly 50 %.

News

28.10 China's BGI Shenzhen, the world's largest genomics company, launches subsidiary in Port Island, Kobe

27.10 Amino Up Chemical, Sapporo, forms joint venture with Chr.Hansen A/S on functional food

26.10 RIKEN and SAITEC breed high-performance sake yeast

Saitama Industrial Technology Center (SAITEC) and the Institute of Physical and Chemical Research (RIKEN) have jointly developed a new yeast for quality sake brewing based on heavy ion beam mutagenesis technology. In cooperation with Saitama Brewing Association, this new yeast will help to brew light and elegant Japanese sake with small acidity and constant aroma from the finest rice. Three brewing companies in Saitama sell already the first "Riken brand" Japanese sake variety "Nishina Homare".

26.10 JAIST team solves conformation of stomagen, a plant peptide hormone

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- 25.10 RIKEN Plant Science Center solves biosynthetic pathway of auxin biosynthesis, will help plant breeding
- 25.10 Bio-related budget requests of Ministries rise by 28 % compared to 2011
- 24.10 ASIW Agency to open health-food database in mid-December 2011
The Association for Health Economics Research and Social Insurance and Welfare (ASIW). "Shafuku", will open a "scientific proof database for health food materials" by mid-December 2011
- 23.10 Sema4D protein-directed antibodies support recovery of degenerated bone: Tokyo Medical and Dental University
- 21.10 Scientists at National Institute of Agrobiological Sciences introduce high-density collagen gel
- 20.10 Profs. YAMANAKA and NAKAUCHI start company producing artificial human blood platelets based on iPS technology
As of Sept. 15, a startup company for the commercial production of artificial human blood platelets was established in Tokyo. The technology is based on results of the University of Tokyo Medical School (Prof. Hiromitsu NAKAUCHI) and on the iPS Cell Laboratory of Kyoto University (Prof. Hiroyuki ETO). President is Mr Shimosaka, former manager of a blood-related medical equipment venture at Kirin Brewery. Capital of the company is 10 million Yen (~ 900 T€) of which 3 million were contributed by Professor Shinya YAMANAKA, Kyoto University, a board member of iPS Academia.
- 18.10 Structure of oxygen-tolerant hydrogenase enzyme from Desulfovibrio spec. solved
- 18.10 Kyowa Hakko establishes enzymatic production process for cis-4-hydroxy-L-proline
- 17.10 Japan Tobacco prolongs forest conservation project in Kochi for 5 more years
- 14.10 FOSHU permissions for health food reduced by 50 % in one year
- 12.10 RIKEN: glycosylation enzyme required to accumulate anthocyanins in plants
- 12.10 Hokkaido University: lactic acid Polymerase detected in bacteria.
- 12.10 Toyota: transgenic yeast uses C5 and C6 sugars for bioethanol formation simultaneously
At an exhibition at BioJapan2011, Toyota presented data on the production of bioethanol by a transgenic yeast which uses C5 and C6 sugars contained in biomass simultaneously. It also released news on a tree planting subsidiary.

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- 12.10 Osaka University: conformation of DNA read at single molecule level
- 12.10 Takeda starts phase I/II of antibody conjugate SGN-35, directed towards Hodgkin lymphoma
- 11.10 Ajinomoto nominated first by US patent board ranking
- 11.10 Calpis starts marketing of "Calpis Sour Milk" containing „anti-ageing peptide"
- 11.10 Ezaki Glico starts sales of POs-Ca F, a chewing gum for tooth remineralization
- 11.10 Microalgae Corp proposes blue-green algae for decontamination of radioactive soil
- 11.10 Protein Express Co. and others introduce „quenchbodies" for immunoassays
Professor Hiroshi UEDA of The University of Tokyo, Professor Takahiro HOHSAKA of the Hokuriku University and Ryoji ABE of Protein Express, a service company, announced the development of "quenchbodies", transgenics antibody fragments which detect the fluorescence label of a neighboring labeled antigen. The quenching is based on a tryptophan residue in the antibody. The findings are published in JACS online edition, Oct. 5.
- 06.10 Nippon Suisan to put antarctic Krill oil on the market
- 05.10 Asahi Soft Drinks increases market share of Lactobacillus-plantarum-based soft drink
- 03.10 Sony develops instrument test for cancer cells based on dielectric measurement

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If you are looking for more news or need a more detailed coverage, details are at www.window-to-japan.eu/news.html

Coming up

34. Annual Meeting of MBSJ in Yokohama, Dec. 13-16



特定非営利活動法人
日本分子生物学会
The Molecular Biology Society of Japan

The meeting, <http://www.mbsj.jp/en/index.html>, gathers over 2000 contributions and over 5000 participants each year. "Window-to-Japan" will be among the attendants.

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