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PRESS RELEASE

SINGAPORE, 16 September 2005

FASTER, MORE SENSITIVE CANCER DIAGNOSTICS POSSIBLE WITH NEW BREAKTHROUGH DETECTION METHOD

1. **Scientists at A*STAR's Institute of Molecular and Cell Biology (IMCB) and Hitachi Asia Ltd. have developed a new method of detecting DNA methylation[1] status of multiple genes simultaneously. This breakthrough is the first of its kind to utilise a bead-array flow cytometric platform and opens up possibilities in high throughput cancer diagnostics.**

2. Studies have shown that DNA methylation on tumour suppressor genes occurs in several types of cancer and pre-cancerous lesions. The discovery has led it to gain importance as a useful cancer marker in diagnostics. However, current methods to detect DNA methylation are time consuming and obscure and each assay only allows one gene to be analysed at a time.

3. This joint project was started last April by IMCB researchers Masafumi Inoue, Hiroshi Ida, Lee Kok Keong and the team's advisor, Professor Yoshiaki Ito. The breakthrough overcomes the limitations of current methods by allowing multiple genes to be analysed for the presence of alterations with much higher accuracy.

4. Masafumi Inoue, who is also a Principal Coordinator in the Translational Research Facility in IMCB, said, "What makes this assay attractive is that it enables users to process up to 100 samples in less than three hours and its sensitivity allows the detection of one suspected cancerous cell out of 1000 healthy cells. This opens up potential applications in the areas of cancer diagnostics which require both high throughput and sensitivity."

5. Mr Masakazu Naito, Director and General Manager of Hitachi Asia Ltd, remarked, "From my personal experience of a suspected tumour treated at an early stage, early detection of cancer has a significant impact on saving lives. We are delighted that Hitachi Asia would be able to contribute to the future development of early cancer detection in patients."

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[1] DNA methylation is a phenomenon whereby cytosine residues of so-called CpG islands present in the human genome are found to be altered. More information can be found in the article titled "DNA methylation - How important in gene control?" which was published in *Nature*, 1984 (Vol. 307(5951):503-4).

6. Professor Sir David Lane, Executive Director of IMCB added, “Cancer today still remains a difficult disease to diagnose and the search for faster, more accurate ways of detection are still ongoing. This discovery brings to mind a sense of immediate application due to the availability of the detection platform and also highlights the immense value of collaborations between the public and private sectors to make translational research a reality.”

7. A patent application has already been filed and work is in progress to increase the number of genes for analysis. The team presented these findings at the 64th Annual Meeting of the Japanese Cancer Association in Sapporo, Japan on 16th September 2005.

8. The market potential for cancer molecular diagnostics system in Singapore is estimated to be worth S$185 million by 2008 and will rise to S$230 million by 2012.

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Notes to the Editor

About the findings

The results of the findings were presented on 16th of September 2005 at The 64th Annual Meeting of the Japanese Cancer Association in Sapporo, Japan. The title of the presentation is “A high throughput simultaneous detection of DNA methylation in tumor suppressor genes by a bead-based flow cytometric assay”.

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Useful links

DNA Methylation Society - http://www.dnamethsoc.com
DNA Methylation Database - http://www.methdb.de

About the Institute of Molecular and Cell Biology (IMCB)

http://www.imcb.a-star.edu.sg

The Institute of Molecular and Cell Biology (IMCB) is a member of Singapore’s Agency for Science, Technology and Research (A*STAR) and is funded through A*STAR’s Biomedical Research Council (BMRC). It is a world-class research institute in biomedical sciences with core strengths in cell cycle, cell signalling, cell death, cell motility, protein trafficking, developmental biology, structural biology, genomics and infectious diseases. Its recent achievements include leading an international consortium that successfully sequenced the entire pufferfish (Fugu) genome. The IMCB was awarded the Nikkei Prize 2000 for Technological Innovation in recognition of its growth into a leading international research centre and its collaboration with industry and research institutes worldwide. Established in 1987, the Institute currently has 38 independent research groups with more than 400 staff members.

About Hitach Asia Ltd

http://www.hitachi.com.sg

Hitachi Asia is one of four regional headquarters for Hitachi's worldwide operations, the other three being North America, Europe and China. Established in 1989, Hitachi Asia operates in 10 offices across 7 Asian countries, excluding East Asia. Hitachi Asia offers a wide range of systems, products and services in market sectors such as information systems, power and industrial systems, digital media systems, consumer products and international procurement. With a customer-driven philosophy, the company constantly delivers innovative solutions to meet the sophisticated demands of its customers.