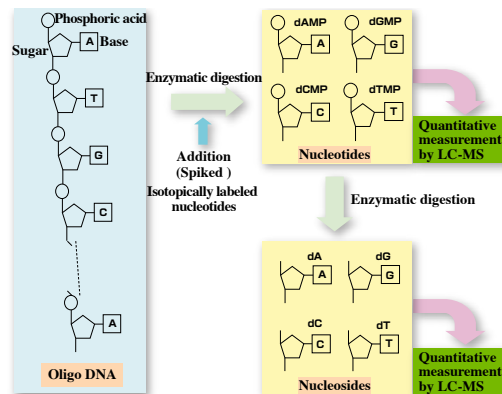


DNA quantitation by isotope-dilution mass spectrometry

Development of method for accurate quantitation of DNA and the application to the development of DNA reference material

In recent years, the demand for quantitative measurement of DNA has been increased in the field beyond basic biology, such as food analysis and clinical diagnosis. Currently, real-time PCR, DNA microarray and UV absorption are utilized for the quantitation, however, the accurate quantitative measurement for DNA has not been established, because of the lack of well characterized reference materials. We have developed an accurate quantitative analysis of DNA using isotope-dilution mass spectrometry (ID-MS) for the development of DNA reference materials. In this study, 20-mer oligo DNA was used for the analyte, which was spiked with isotopically labeled nucleotides, and digested enzymatically. The resulted nucleotides and nucleosides mixtures were measured by LC-MS. The measured concentration of the analyte oligonucleotide was compared with other quantitation methods. The accuracy of this method has also been verified by the inter-laboratory comparison based on the CIPM/CCQM pilot study P54.1.



Quantitative measurement of oligo DNA by using ID-MS

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AIST TODAY Vol.8, No.3 p.29 (2008)

In Brief

Fourth Biomass-Asia Workshop

The Fourth Biomass-Asia Workshop was held from November 20 to 22, 2007 at Shah Alam, Malaysia. The workshop was jointly organized by Malaysia and Japan. Malaysian organizers are Ministry of Energy, Water and Communications (MEWC), Ministry of Science, Technology, and Innovation (MOSTI), Ministry of Natural Resources and Environment (NRE), and Ministry of Plantation Industries and Commodities Malaysia (MPIC). Japanese organizers are Ministry of Education, Culture, Sports, Science and Technology (MEXT), Ministry of Agriculture, Forestry and Fisheries (MAFF), Ministry of Economy, Trade and Industry (METI), and Biomass-Asia Research Consortium.

Biomass-Asia Workshop, the first of which was held in Tokyo and Tsukuba in 2004, has been held annually in Thailand, Tokyo and in 2007, in Malaysia. Over 250 people



Workshop site

participated from twelve countries including ten Asian countries.

Following opening remarks by Dr. Tatsuo Katsura, the then Senior Vice-President, AIST, and Mr. Kunio Oguri, Deputy Director General, Agriculture, Forestry and Fisheries Research Council Secretariat, special lectures were delivered by Prof. Kenji Iiyama, President, Japan International Research Center for Agricultural Sciences, and Mr. Lim Keng Yaik, Minister of MEWC. In the technical session, based on the result of study at the three prior workshops, there was active discussion on regionally adaptable model of sustainable biomass utilization technology in Asia. In the last session, a direction was charted for the development of utilization technology in three models, ASEAN island model, ASEAN continental model, and China model. The next workshop was agreed to be held in China, and the two day workshop came to a close. At the evening reception, there were speeches by MEWC Secretary-General and Mr. Masahiko Horie, Japanese Ambassador to Malaysia. On the last day, there were separate technical tours to palm oil mill facility and to power generating facility from waste paper.