Research Hot Line

UPDATE FROM THE CUTTING EDGE

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**The abstracts of the recent research information appearing in the Vol.7 No.1-3 of "AIST TODAY" are introduced, classified by research area.
For inquiry about the full article, please contact the author via e-mail.**

Life Science & Technology

A micro immuno-sensing chip for cardiac marker detection

Ryoji Kurita
Institute for Biological Resources and Functions
r.kurita@aist.go.jp

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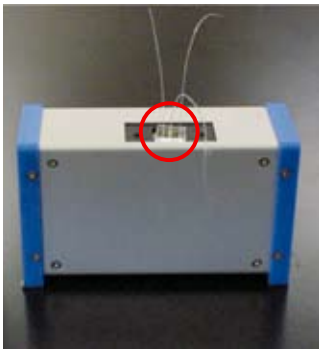
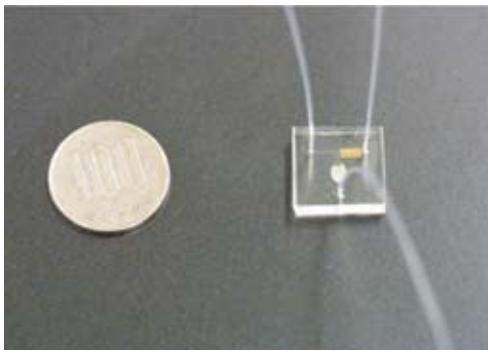
We have developed a micro immuno-sensing chip designed to determine B-type natriuretic peptide (BNP) using a microfluidic device combined with a portable surface plasmon resonance sensor system. The lower detection limit of 5 pg/mL was achieved by monitoring the surface plasmon resonance angle shift caused by enzymatic product accumulation in the microfluidics, which covers the required detection range for the BNP concentrations found in blood. We were able to measure trace levels of BNP (15 fg) within 30 min by the simultaneous use of a labeled enzymatic reaction and the real-time monitoring of enzymatic product (thiol) accumulation in the microfluidic device.



A portable surface plasmon resonance sensor (○: micro immuno-sensing chip)



A magnified figure of micro immuno-sensing chip