

## Chip-based microenzymeassay for kinase using antibody

Seok Jae Lee, Sang Yup Lee

Department of Chemical and Biomolecular Engineering and BioProcess Engineering

Research Center, KAIST

Tel: +82-42-869-5970, FAX: +82-42-869-8800

### Abstract

Many new gene products are being discovered by large-scale genomics and proteomic strategies. the challenge is now to develop high throughput approaches to systematically analyze protein interactions and to assign a biological function. Recently, Microarrays of immobilized functional proteins have been used for the determination of analysis of protein-protein interactions and biochemical analysis of protein function. To realize an enzyme reaction on chips, we have developed chip-based microenzymeassay for kinase using fluorescence labeled antibody that employ extremely low sample volume and accurate, simultaneous processing of thousands of proteins. A high-precision robot designed to manufacture complementary DNA microarrays was used to spot proteins onto aldehyde glass sides at extremely high spatial densities.

### Acknowledgement

This research was funded by Center for Ultramicrochemical Process Systems sponsored by KOSEF.

### References

1. C. B. Cohen, E. Chin-Dixon, S. Jeong, and T. T. Nikiforov (1999), "A Microchip-Based Enzyme Assay for Protein Kinase", *Analytical Biochemisry*. **273**, 89-97.
2. G. MacBeath and S. L. Schreiber (2000), "Printing Proteins as Microarrays for High-Throughput Function Determination", *Science* **289**, 1760-1763.
3. H. Zhu and M. Snyder (2001), "Protein arrays and microarrays", *Current Opinion in Chemical Biology* **5**, 40-45.