



Agilent Technologies

Technical Seminar

Next-Generation High Sensitivity Microarray Accelerates Your Omics Research

【Speaker】 Toshiki Taya, Senior Applications Scientist, Agilent Technologies

【Date】 Tuesday, April 21, 2009 16:00~17:00

【Venue】 RIKEN CENTER for DEVELOPMENTAL BIOLOGY (CDB) A7F Seminar Room

Overview:

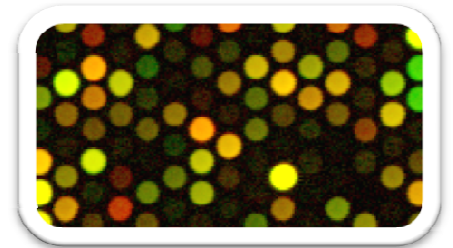
More than ten years have already passed since the advent of microarray technology, and in the last two years, the technology is moving into a new phase. It has been predominantly characterized in “how it’s covered”, but now “how sensitive it is” is becoming of added importance to detect biological changes in more detail.

The Agilent Technologies’ microarray features the use of the latest ink-jet technology that synthesizes long oligo DNA (60 mer) *in-situ* directly on the glass substrate. We are now able to synthesize long oligo in high quality by achieving extremely high reaction efficiency in the process that has never been achieved previously. The high quality oligo made with high synthetic yield greatly decreases cross hybridization and leads to “high sensitivity” that couldn’t be achieved with conventional microarrays.

During this seminar, we will introduce four applications that utilizes the highest possible yield of “high sensitivity” developed by the oligo synthetic technology which is the core technology of Agilent. (Please see the following details.)

● Gene Expression: Detect Low Expression Area, And Dig Up Buried Pathways

- Experience ‘5-digits dynamic range’ with high sensitivity and reproducibility
- Explore ‘analysis in low expression area’ controlled by transcription factors, signaling factors, etc.
- Open new horizons to elucidate mechanisms/network of life phenomenon



● miRNA: Leverage Highly Specific, Unique Probe Design

- Make the most use of ‘novel, unique probe design’ for miRNA
- Realize high accuracy and specificity by highly specific end labeling method
- Detect selectively only for mature miRNA and demonstrate ‘extremely high correlations’ with quantitative PCR

● arrayCGH: Ascertain Small Aberrations in Genomic Structure

- Rely on direct labeling and high-quality probe design that ‘responds to the decrease of noise’
- Accurately detects the ‘subtle’ DNA copy number changes in chromosomes
- Customize microarray to ‘focus on a target area’



● Epigenetics: New Challenge to Elucidate Transcriptional Network

- Acquire comprehensive ‘whole’ view of *in-vivo* genomic DNA-protein interactions and methylated regions
- Interpret ‘directly’ transcription control network and mechanisms
- Find ‘profound biological discoveries’ by connecting various biological databases

WE MAKE IT. You make it happen.

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