



Short  
Communication

## Different Types of Microarray Technologies

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### Abstract

Microarray Technologies are used to study expression of numerous gene at once. Microarray consists of solid surface to which biological molecules are arranged in regular pattern. It is applicable in the fields of DNA, Protein, Peptide, and small molecules like drugs and metabolites. Microarray is a two dimensional array on solid substrate which that assays large amount of biological using multiplexed, detection methods

### Keywords

Microarray; DNA; Gene; Protein-interactions; Drug development; Gene Expression

### Types of Microarrays

DNA microarray, Oligonucleotide microarray, SNP microarray, cDNA microarrays, SNP microarrays, Glass DNA microarrays, Protein microarrays, MM Chips, Peptide microarrays, cellular microarrays, Tissue microarrays, Antibody microarrays, Chemical compound microarrays.

**Glass DNA Microarrays** : Involves the micro spotting of fabricated cDNA fragments on glass slide.

DNA microarray, Oligonucleotide microarray, SNP microarray, cDNA microarrays, SNP microarrays, Glass DNA microarrays, Protein microarrays, MM Chips, Peptide microarrays, cellular microarrays, Tissue microarrays, Antibody microarrays, Chemical compound microarrays.

DNA microarrays which is known as DNA Chip, gene array or genome chip : It is the collection of microscopic DNA Spots ,each spot of DNA is called probe and which it represent single gene. The main principal used in DNA Microarray is hybridization. Using this technology the presence of one genomic or cDNA sequence in lakhs or more sequence can be seen in single hybridization.

Microarray Hybridization is an appropriate hybridization condition and are critical to ensure correct measurements. Hybridization procedures involves several steps.

**Steps involved in Microarray are:** Collect tissue, Isolate RNA,

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Make Labelled DNA copy, Apply DNA, Scan microarray, Analyse data.

### Gene Expression monitoring

Measurement of absolute level of expression for each represented gene by quantifying the amount of targets that hybridise with the arrayed probes.

Expression gene can be used catalogue which genes are expressed in particular tissue type .Expression arrays can also be used to study dynamic change. DNA microarray technologies offers the possibilities of high throughput systemic analysis of transcriptase in one experiment.

**Diagnostic Arrays:** Diagnostic arrays plays important role in treatment of diseases. A rapid accurate and reliable diagnostic methods allows identification of disease for suitable therapy , which can reduce the cost of treatment.

**Genomic microarray analysis:** Microarray based DNA profiling technologies are capable of detecting copy number changes for whole genome in a single assay.

**Identification of new genes:** The efficient way of annotating human genome and facilitating the use of information of genomes for experimental purpose

### Applications

**In cancer:** it identify the cancer biomarkers , identification of gene associated with chemo resistance. Early detection of precancerous lesions : it identifies gene expression profiles or genomic finger prints will allow clinicians which determine early cancer.

**Gene expression profiling:** During the course of development , In disease state versus healthy.

**Molecular Diagnosis:** Which includes molecular classification of disease?

**Drug Development:** Which includes identification of new target

In study the pathogenicity of a Disease.

In protein- Protein Interactions , Drug targets , Allergen arrays.

Protein small molecule interactions.

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