

SNP Genotyping with Affymetrix GeneChip Microarray

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GeneChip® Mapping Arrays(10K, 100K and MegAllele & related product) can be used for many applications, including cancer genetics, linkage disequilibrium, case-control and family based association studies, chromosomal copy number change analysis, population genetics, and target SNP analysis. These high-density arrays contain thousands of single nucleotide polymorphisms (SNPs), and easy-to-use assays require only 250ng DNA sample, a single primer and one PCR reaction. Each SNP on a GeneChip Mapping Array is interrogated with approximately 40 different probes, enabling GeneChip® Software to make highly accurate, automated genotype calls. Especially the Mapping 100K Set is comprised of two arrays, each with greater than 50,000 SNPs, at call rates >99%, reproducibility is >99.97% and accuracy, as measured by inheritance in trios and concordance with the HapMap Project is >99.7%. Average intermarker distance is 23.6 kb, and 92% of the genome is within 100 kb of a SNP marker. Average heterozygosity is 0.30, with 105,511 SNPs having minor allele frequencies >5%. Also, after identifying candidate genes or regions of interest using whole-genome association or linkage studies, scientists use GeneChip® custom genotyping solutions-MegAllele and related product -to target genes associated with disease or variable drug response. As like this GeneChip Mapping Arrays are bringing whole-genome and target SNP analysis and enabling researchers to perform experiments in days that previously required weeks or months.

REFERENCES

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