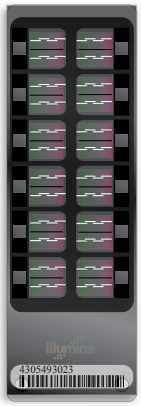
HumanOmniExpress BeadChip

Discover novel trait and disease associations with optimized tag SNPs at an attractive price.

Figure 1: HumanOmniExpress BeadChip



The HumanOmniExpress BeadChip is the industry's highest throughput array providing excellent coverage of common SNP variation as assessed by the International HapMap Project.

Overview

The HumanOmniExpress BeadChip delivers superior power for genome-wide association studies (GWAS), providing high sample throughput and comprehensive genomic content at the industry's best price. Using the proven iScan or HiScan™SQ System, this twelve-sample BeadChip offers unrivaled throughput of thousands of samples per week—the ideal solution for processing the greatest number of samples within a given budget. Optimized tag SNP content from all three HapMap phases has been strategically selected to capture the greatest amount of common SNP variation and drive the discovery of novel associations with traits and diseases.

The OmniExpress BeadChip includes convenient kit packaging, a streamlined PCR-free protocol, and integrated analysis software to provide a comprehensive DNA analysis solution. With the highest data quality and best content, including full support of copy number variation (CNV) applications, this powerful genotyping tool allows you to make more meaningful discoveries and publish faster.

As the basis of the 2010 GWAS Roadmap, the OmniExpress BeadChip provides researchers with favorable pricing and step-wise flexible access to five million variants per sample, including unprecedented coverage of the vast amount of rare variants identified by the 1000 Genomes Project (1kGP). The OmniExpress BeadChip is supported by Illumina's new multi-use workflow, which allows researchers to prepare their sample once and deploy it across multiple Omni arrays as they are released. In addition, this product is customizable with up to 200,000 attempted beadtypes on the OmniExpress+.

HumanOmniExpress Product Information

Feature	Description
Number of Markers	733,202
Number of Samples	12
DNA Requirement	200 ng
Assay	Infinium® HD
Instrument Support	HiScanSQ or iScan
Sample Throughput*	> 1,400 samples / week
Scan Time / Sample	5 minutes

% Variation Captured (r^2 > 0.8)	HapMap MAF > 5%	1kGP MAF > 5%
CEU	0.91	0.62
CHB + JPT	0.91	0.68
YRI	0.66	0.34

Data Performance	Value† / Product Specification
Call Frequency	99.84% / > 99% avg.
Reproducibility	99.99% / > 99.9%
Log R Deviation	0.15 / < 0.30‡

Spacing	Mean / Median / 90th%
Spacing (kb)	4.1 / 2.2 / 9.2

Marker Categories	Number of Markers
Number of SNPs with 10kb of RefSeq genes	381,329
Nonsynonymous SNPs (NCBI annotated)	12,134
MHC / ADME	7,566 / 16,680
Sex Chromosome (X / Y / PAR Loci)	18,239 / 1,697 / 540

* Estimate assumes one iScan system, one AutoLoader2, one Tecan Robot, and a five-day work week.

† Values are derived from reference samples.

‡ Value expected for typical projects, excluding tumor samples or any samples prepared not following standard Illumina protocols.

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HumanOmniExpress BeadChip Kit	Catalog No.
48 sample, single-use kit	WG-311-1120
288 sample, single-use kit	WG-311-1121
1152 sample, single-use kit	WG-311-1122
48 sample, multi-use kit	WG-311-1125
288 sample, multi-use kit	WG-311-1126

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Pub. No. 370-2009-019 Current as of 20 April 2010

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