



Data Sheet

Affymetrix GeneChip® Bovine Mapping 10K SNP Kit

The Affymetrix GeneChip® Bovine Mapping 10K SNP Kit contains approximately 10,000 SNPs that are multiplexed in a single assay. The SNPs were discovered during the bovine sequencing project, and allow researchers to perform linkage mapping studies on bovine breeds with no bias towards either beef or dairy. The Bovine Mapping 10K SNP Kit is designed to work with the Affymetrix GeneChip® Scanner 3000 (with the appropriate upgrade).

Features and Benefits

- The GeneChip® Bovine Mapping 10K SNP Kit eliminates the need for custom SNP assay designs for particular breeds of cattle.
- It can be used to perform high-resolution linkage with either dairy or beef bovine breeds.
- An average of 3,300 heterozygous markers for beef and dairy breeds without bias.

Key Specifications

- Data completeness ≥ 98 percent
- Repeatability ≥ 99.25 percent
- Quantity of unamplified genomic DNA is 4.0 μ g
- Quantity of genomic DNA required with recommended amplification is 50 \pm 10ng
- Throughput of 48 samples/day (500,000 genotypes/day) in your lab

Panel Design

This genotyping panel was designed to be capable of performing high-resolution linkage and association studies on both dairy and beef bovine breeds. Approximately 92 percent of the SNPs for this project were discovered by the Bovine Genome Sequencing Project. The first draft was placed in the public domain for use by biomedical and agricultural researchers, worldwide, in October 2004. The remaining eight percent were obtained from CSIRO (Australia's Commonwealth

Scientific and Industrial Research Organisation) and beef cattle cross breeds. All SNPs in this panel have been validated in 84 unique bovine samples from six strains of cattle (Angus, Brahmin, Hereford, Holstein, Jersey, and Limousin). The average number of heterozygous markers is $\sim 3,300$ in both beef and dairy breeds. The number is slightly lower in single breeds and higher in crossbreeds. About eight percent of the SNPs were specifically selected to be in genes (although not necessarily coding) and the remainder come from random sequencing of four cow breeds (Holstein, Angus, Limousin, Hereford) by the Baylor Genome Sequencing Project resulting in approximately one SNP per every 300-350 kb of genomic sequence. This product is designed to be most useful for linkage studies, or association studies if the interval to the common ancestor is small.

ACKNOWLEDGEMENTS

The SNPs used to generate these data have been produced as part of a community project of the International Bovine Genome Sequencing Consortium (IBGSC) aimed at facilitating and speeding research involving the Bovine Genome. The producers of these data have made the information available prior to publication, with the intention the data are used widely. The IBGSC requests that users respect that the IBGSC will soon generate a publication describing the resource and that, when available, this will be cited as the source of these data and reagents. In the meantime, the available SNP data should be cited as from www.hgsc.bcm.tms.edu/projects/bovine. Users are invited to read the report of the 2003 Fort Lauderdale meeting 'Sharing Data from Large Scale Biological Research Projects: A System of Tripartite Responsibility, viewable at www.wellcome.ac.uk/assets/wtd003207.pdf, for guidelines of expectations of the data producers.

Ordering Information

Affymetrix GeneChip® Bovine Mapping 10K SNP Kit

900870 *Kit contains enough reagents to process a total of 24 assays (including one control)*

Affymetrix GeneChip® Universal 10K Tag Array

900604 *Arrays have approximately 10K features on each array that can detect 10K SNPs using the Affymetrix GeneChip DNA Analysis System incorporating MIP technology (six pack)*

900580 *(96 pack)*

To Order

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