Data Sheet

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GeneChip® Bovine Genome Array

The GeneChip® Bovine Genome Array is specifically designed to monitor expression of approximately 23,000 *Bos taurus* (bovine) transcripts. The array is representative of all publicly known high-quality bovine gene sequences, enabling researchers to conduct whole-genome expression profiling of cattle for agricultural applications. Additionally, the Bovine Genome Array is a useful tool for biomedical researchers using bovine as an animal model to study human disease processes.

Applications

The Bovine Genome Array is an ideal tool for researchers studying gene expression profiles in cattle. With the broadest representation of publicly available expressed sequence information, bovine researchers can use this array to monitor genetic mechanisms regulating a variety of preferred traits, such as:

- Disease resistance
- Meat and dairy production
- Stress tolerance

The Bovine Genome Array can be used to obtain comprehensive information about disease resistance in wild type animals, which has wide-ranging benefits. Through the identification and increased understanding of natural disease resistance in bovines, researchers can begin to introduce natural resistance into herds, enabling cattle breeders to raise cattle in parts of the world where it is not currently possible due to debilitating diseases.

Additionally, the Bovine Genome Array has important biomedical applications for researchers exploring how the environment interacts with human health and disease processes. Through their co-evolution with humans, cattle have been selected for desirable characteristics such as stamina, tolerance for extreme environmental stresses, and pathogen resistance. Because similar selective pressures have been exerted on humans, cattle are ideal models for studying environmental factors on human health and disease, including obesity and female reproductive health.

Array profile

The Bovine Genome Array is a 100-format, 11 µm array design that contains 11 probe pairs per probe set. The design of the array was based on content from UniGene and GenBank® mRNAs. The Bovine Genome Array was developed through the GeneChip® Consortia Program and contains 24,027 probe sets representing more than 23,000 transcripts and includes approximately 19,000 UniGene clusters.

Instrument/software requirements

- GeneChip® Scanner 3000
- Affymetrix® GeneChip® Command Console® Software (AGCC)

Specifications

Number of probe sets *B. taurus* (bovine)	24,072
Number of transcripts *B. taurus* (bovine)	approximately 23,000
UniGene clusters	approximately 19,000
Number of arrays in set	one
Array format	100
Feature size	11 µm
Oligonucleotide probe length	25-*mer*
Probe pairs per sequence	11
Hybridization controls	*bioB, bioC, bioD,* from *Escherichia coli* and *cre* from P1 bacteriophage
Poly-A controls	*dap, lys, phe, thr, trp* from *Bacillus subtilis*
Housekeeping/control genes	actin, GAPDH, eflα, 5.8S rRNA, 12S rRNA, 18S rRNA, cyclophilin B, glutathione S-transferase, lactophorin, translation initiation factor eIF-4E
Detection sensitivity	1:100,000*

*As measured by detection in comparative analysis between a complex target containing spiked control transcriptions and a complex target with no spikes.

Ordering information

Part number	Description
GeneChip® Bovine Genome Array	
900561	Contains 2 arrays
900562	Contains 6 arrays
900563	Contains 30 arrays

Supporting products

Part number	Description
GeneChip® 3′ IVT Express Kit	
901228	10 reactions
901229	30 reactions

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