



Data Sheet

GeneChip® Bovine Genome Array

The GeneChip® Bovine Genome Array is specifically designed to monitor expression of approximately 23,000 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 GeneChip Bovine Genome Array is a useful tool for biomedical researchers using bovine as an animal model to study human disease processes.

The GeneChip Bovine Genome Array was created in collaboration with leading bovine genomics researchers through the GeneChip® Consortia Program. The array was designed based on content from Bovine UniGene Build 57 (March 24, 2004) and GenBank® mRNAs. The Bovine Genome Array contains 24,027 probe sets representing over 23,000 transcripts, including assemblies from approximately 19,000 UniGene Clusters.

Power of the Probe Set—The key advantage of GeneChip technology is that each high-density array contains multiple probe pairs per probe set, providing multiple independent measurements for each transcript.

Applications

The GeneChip® 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 will be able 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 about 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 not currently possible due to debilitating diseases in these regions.

Additionally, the GeneChip 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.

Instrument Software Requirements

- GeneChip® Scanner 3000, enabled for High-Resolution Scanning*
- GeneChip® Operating Software (GCOS) v1.1 or higher, which contains the High-Resolution Scanning Update

*GeneChip Scanner 3000 High-Resolution Update is standard on all instruments shipped starting in September 2003 with serial number series 502. Previous versions (serial number series 501) will require the 00-0110 GeneChip Scanner 3000 High-Resolution Update to be installed.

Critical Specifications

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

¹As measured by detection in comparative analysis between a complex target containing spiked control transcriptions and a complex target with no spikes

Supporting Products

Part #	Product Name	Description
900493	GeneChip® One-Cycle Target Labeling and Control Reagents	Sufficient for 30 reactions
900494	GeneChip® Two-Cycle Target Labeling and Control Reagents	Sufficient for 30 reactions
900375	GeneChip® T7-Oligo(dT) Promoter Primer Kit	Sufficient for 150 reactions
900371	GeneChip® Sample Cleanup Module	Sufficient for 30 reactions
900431	GeneChip® One-Cycle cDNA Synthesis Kit	Sufficient for 30 reactions
900432	GeneChip® Two-Cycle cDNA Synthesis Kit	Sufficient for 30 reactions
900449	GeneChip® Expression 3 -Amplification Reagents for IVT Labeling	Sufficient for 30 reactions
900433	GeneChip® Eukaryotic Poly-A RNA Control Kit	Approximately 100 reactions
900454	GeneChip® Eukaryotic Hybridization Control Kit	Sufficient for 30 reactions
900457	GeneChip® Eukaryotic Hybridization Control Kit	Sufficient for 150 reactions
900301	Control Oligo B2 (included in Hybridization Control Kit)	Sufficient for 150 reactions

Affymetrix® products can be purchased directly from Affymetrix in the United States, many European countries, and many Asian countries. For all other territories, please view a list of our distribution partners, which can be located at: <http://www.affymetrix.com/site/contact/index.affx>.

Ordering Information

GeneChip® Bovine Genome Array

GeneChip® Bovine Genome Array

900561 *Contains 2 arrays*

900562 *Contains 6 arrays*

900562 *Contains 30 arrays*

To Order

North America

888-DNA-CHIP 888-362-2447

Europe

+44 (0) 1628 552550

Japan

+81-(0)3-5730-8200

AFFYMETRIX, INC.

3380 Central Expressway
Santa Clara, CA 95051 USA
Tel: 1-888-DNA-CHIP (1-888-362-2447)
Fax: 1-408-731-5441
sales@affymetrix.com
support@affymetrix.com

AFFYMETRIX UK Ltd

Voyager, Mercury Park,
Wycombe Lane, Wooburn Green,
High Wycombe HP10 0HH
United Kingdom
Tel: +44 (0) 1628 552550
Fax: +44 (0) 1628 552585
saleseurope@affymetrix.com
supporteurope@affymetrix.com

AFFYMETRIX JAPAN K.K.




Mita NN Bldg., 16 F
4-1-23 Shiba, Minato-ku,
Tokyo 108-0014 Japan
Tel: +81-(0)3-5730-8200
Fax: +81-(0)3-5730-8201
salesjapan@affymetrix.com
supportjapan@affymetrix.com

www.affymetrix.com Please visit our web site for international distributor contact information.

For research use only.

Not for use in diagnostic procedures.

Part No. 701798 Rev. 1

©2004 Affymetrix, Inc. All rights reserved. Affymetrix®, GeneChip®, , , , HuSNP®, Jaguar™, EASI™, MicroDB™, GenFlex®, CustomExpress®, CustomSeq™, NetAffx™, "Tools to take you as far as your vision", and "The Way Ahead™" are trademarks owned or used by Affymetrix, Inc. Array products may be covered by one or more of the following patents and/or sold under license from Oxford Gene Technology: U.S. Patent Nos. 5,445,934; 5,744,305; 6,261,776; 6,291,183; 5,700,637; 5,945,334; 6,346,413; 6,399,365; and 6,610,482; and EP 619 321; 373 203 and other U.S. or foreign patents.