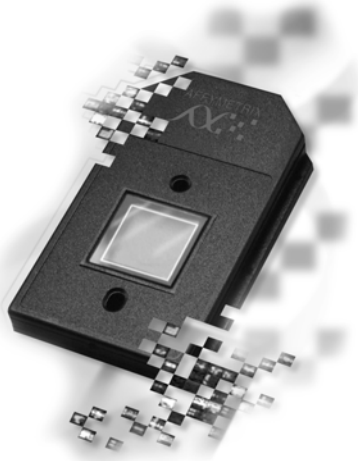




GeneChip® Barley Genome Array

For monitoring the relative abundance of more than 22,500 transcripts from the *Hordeum vulgare* genome.



INTENDED USE _____

The GeneChip® Barley Genome Array contains more than 22,500 probe sets representing transcripts of *Hordeum vulgare*. The GeneChip Barley Genome Array was designed and funded by the USDA-IFAFS Triticeae Improvement group in collaboration with Affymetrix and the international barley community.

Sequences used for the array design were collected from consortia labs submitting EST sequences and by collecting sequences from the NCBI/GenBank® non-redundant database. Approximately 400,000 raw barley ESTs were submitted from 84 libraries, and about 350,000 survived quality pruning. Stringent CAP3 clustering (-p95 -d60 -f100 -h50) was performed and resulted in 53,030 “unigenes” (26,634 contigs and 26,396 singletons). 25,500 contigs and singletons had complete 3’ ends suitable for array design (see HarvEST Triticeae v0.95 and higher). This included all 1,145 known barley genes (including alleles) from the NCBI non-redundant database. The non-redundant cloned gene set was integrated with the EST clusters to aid in scaffolding the ESTs and also to retrieve any rare, interesting genes (e.g., Mla, Rar1, Sgt1, Rpg1) for inclusion on the GeneChip microarray. After pruning against an enhanced Triticeae repeat element database (TREP), the exemplar set of 25,500 contigs and singletons was submitted to Affymetrix for initial computation.

Potential applications for the barley array include analysis of malting properties, pest and disease control, abiotic stress tolerance nutritional characteristics, and reproductive development. The GeneChip Barley Genome Array was released in June, 2003.

Oligonucleotides are synthesized *in situ* to each corresponding sequence. Eleven pairs of oligonucleotide probes are used to measure the level of transcription of each sequence represented on the GeneChip Barley Genome Array.

The probe arrays are for research use only and not intended for use in diagnosis of diseases.

Refer to the *GeneChip® Expression Analysis Technical Manual* (P/N 900365) for procedures regarding target preparation, target hybridization, fluidics station setup, probe array scan, and data analysis.

COMPONENTS _____

The GeneChip Barley Genome Array, P/N 511012

The GeneChip Barley Genome Array is part of the Made-to-Order Array Program. This array can be ordered in increments of five arrays.

ARRAY FORMAT _____

These arrays are manufactured in the **49** format.

FLUIDICS PROTOCOL REQUIRED _____

1. Fluidics Station 400: EukGE-WS2
2. Fluidics Station 450: EukGE-WS2_450

LIBRARY FILES REQUIRED _____

1. Barley1.cif
2. Barley1.cdf

PRECAUTIONS _____

1. **GENECHIP PROBE ARRAYS ARE FOR RESEARCH USE ONLY; NOT FOR DIAGNOSTIC PROCEDURES.**
2. Avoid microbial contamination, which may cause erroneous results.
3. **WARNING: All biological specimens and materials with which they come into contact should be handled as if capable of transmitting infection and disposed of with proper precautions in accordance with federal, state, and local regulations. This includes adherence to the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) for blood-derived and other samples governed by this act. Never pipet by mouth. Avoid specimen contact with skin and mucous membranes.**
4. **CAUTION:** Exercise standard precautions when obtaining, handling, and disposing of potentially carcinogenic reagents.
5. Exercise care to avoid cross-contamination of samples during all steps of this procedure, as this may lead to erroneous results.
6. Use powder-free gloves whenever possible to minimize introduction of powder particles into sample or probe array cartridges.

STORAGE, HANDLING, AND STABILITY _____

The GeneChip probe array consists of a square glass substrate mounted in a plastic cartridge (Figure 1). The glass contains an array of oligonucleotides that, when mounted, is on the inner glass surface. A chamber in the plastic housing directly under the glass acts as a reservoir where hybridization and washing occur.

Although the inner glass surface of the probe array is protected, any contamination or scratches on the outer surface of the glass can compromise the accuracy of the scan. Avoid touching the surface of the glass with your fingers. Skin oils and other substances, such as lotions or ink, can fluoresce. If the surface of the glass is noticeably dirty, it can be carefully cleaned with a non-abrasive laboratory tissue.

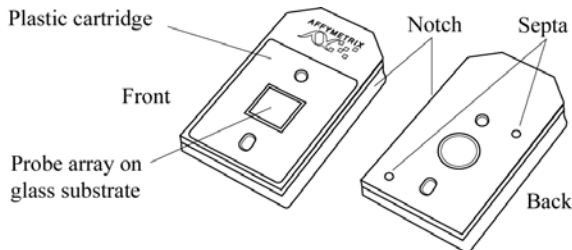


Figure 1 GeneChip® Probe Array

The GeneChip probe arrays should be stored at 2° to 8°C and must not be frozen. Refer to the expiration date on the package label. Do not use probe arrays or reagents after the expiration date.

CONTACT INFORMATION _____

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TRADEMARKS _____

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PATENTS _____

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