GENOMICS INFORMATICS PROTEOMICS METABOLOMICS

ATCTGATCCTTCTGAACGGAACTAATTTCAA
GAATCTGATCCTTGAACTACCTTCCAAGGTG

Human ENCODE

Agilent ChIP-on-Chip Set

Agilent's novel and powerful method of location analysis of DNA binding proteins pairs chromatin immunoprecipitation (ChIP) with Agilent DNA microarrays to allow the construction of comprehensive DNA-protein binding profiles. This oligonucleotide microarray enables you to use ChIP-on-chip technology to gain broad insight into the mechanisms of human gene regulation by studying the ENCODE regions on a genome-wide scale.

Features and Benefits at a Glance

Comprehensive and Genome-Wide
153,000 probes cover chromosomes 1–22 for the ENCODE regions.

Superior Microarray Performance
Proprietary microarray technology using optimized 60-mer oligonucleotide probes and a convenient two-color labeling system deliver higher sensitivity, accuracy, and greater reproducibility than one-color systems. These unique features allow sensitive measurements of weak- and infrequent-binding events, as well as direct comparisons of samples on the same microarray.

Reliable Binding Data
Powerful algorithms employ neighborhood probe voting with multiple probes to generate reliable data with greater true-binding events and fewer false positives.

Agilent SurePrint Technology
Printed using Agilent's SurePrint technology that features a flexible, industrial-scale inkjet printing process that synthesizes oligonucleotide probes *in situ* onto 1" x 3" slides. Our technology provides a means to consistent, reliable, and affordable microarray products.

Access to Probe Sequence and Annotation
Offers convenient access to public databases and easy extraction of biological information.

Compatible with Easy-to-Use Data Analysis Software
ChIP Analytics software combines annotated, algorithmic array data processing with an easily manipulated text file output and high-speed statistical modeling functions.

Agilent Technologies

Specifications

Product number	G4495A
Microarrays/slide	1
Slides/set	1
Design ID numbers	014792
Microarray format	244K
Probe length	60 bases
Probe Coverage Slide 1	Chromosomes 1–22 (~153,000 probes)
Agilent internal quality control probes	~5000
Sequence source	Human-ENCODE
Feature size	65 µm
Starting sample input	0.5 x 10^7–1 x 10^8 cells
DNA required for labeling	2 µg
Type of labeling	Random priming using Klenow with Cyanine-3 and -5 nucleotides
DNA required for hybridization	5 µg per channel
Hybridization volume	500 µL

The Agilent Probe Advantage

Unlike other companies, Agilent provides optimized and validated probe design that delivers the high signal-to-noise ratios that are essential for the success of ChIP-on-chip experiments. We carefully design our probes using stringent criteria.*

- 60-mer oligonucleotide probes provide robust hybridization—critical for the sensitivity and specificity that ChIP-on-chip demands.
- Average probe spacing parameters have been specifically optimized for the ChIP method as compared to other microarray applications.
- Repeat regions are masked to significantly reduce non-specific noise.

*Probes are designed with criteria including optimal T_m, unique sequence, and self-structure prediction.

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