

# Array Comparative Genomic Hybridization (Array-CGH)

## CGH Labeling Kit for BAC Arrays (Cat. No. 42670)

### With this kit you can label:

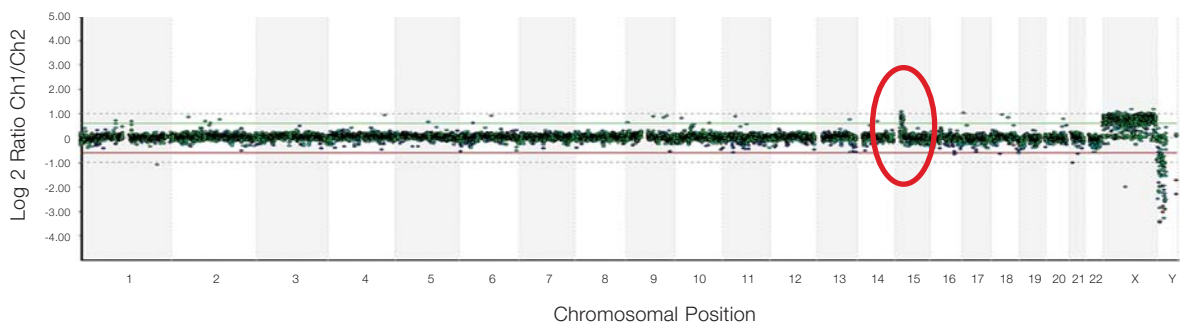
- 150 ng to 2 ug genomic DNA without amplification for array-CGH
- with high amounts of dye incorporation and high yields
- Difficult samples such as FFPE samples or dilute genomic DNAs

### With this kit you can expect:

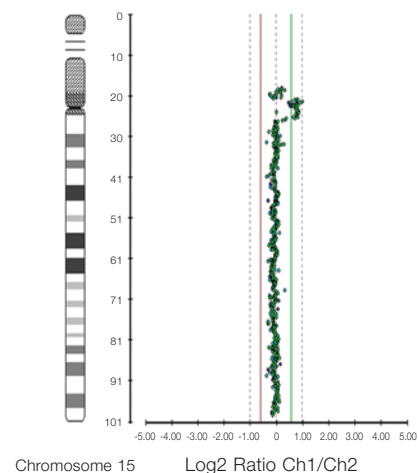
- Sensitive detection of minute chromosomal imbalances
- Reproducible dye swaps
- Flexible protocols to fit your experimental needs

### Label 150 ng to 2 ug genomic DNA Without Amplification

Enzo's CGH Labeling Kit for BAC arrays provides all the reagents necessary for cyanine labeling of 0.15 to 2.0 ug of genomic DNA in one easy-to-use kit.

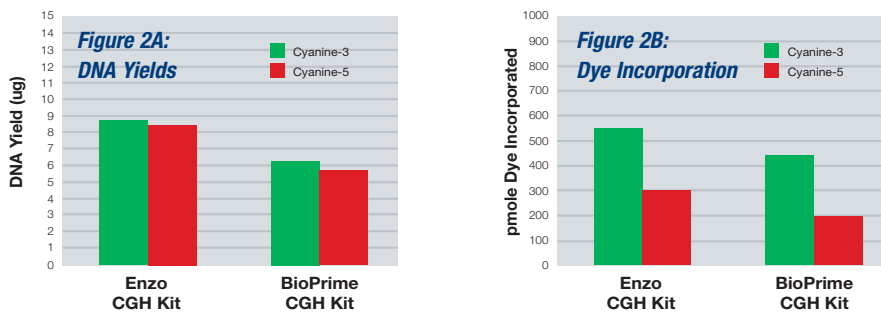


**FIGURE 1: Chromosomal segmentation analysis and chromosome 15 profile of Prader-Willi syndromic DNA on a RCPI 19K BAC array.** Array CGH analysis of 150 ng of cyanine-labeled Prader-Willi genomic DNA vs. 150 ng of cyanine-labeled normal female genomic DNA. The characteristic deletion found in males with Prader-Willi syndrome is clearly detectable in both the chromosomal segmentation analysis (oval, above) and the chromosome 15 profile (right).

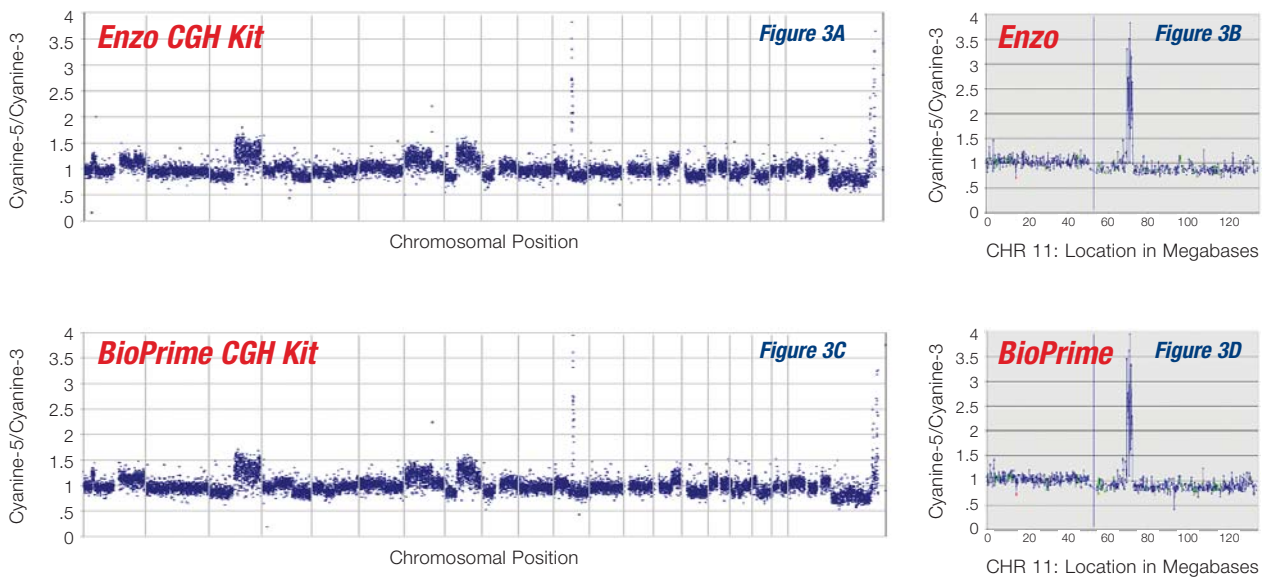


## Superior Performance: High DNA Yields and High Levels of Dye Incorporation

Enzo's CGH Labeling Kit for BAC Arrays consistently generates higher yields of genomic DNA compared to yields generated from Invitrogen™'s BioPrime® Array CGH Genomic Labeling System (Figure 2A). In addition, the Enzo CGH Kit consistently incorporates more dye (Figure 2B). In a head-to-head comparison on a 19K BAC array with identical input genomic DNA samples, Enzo's CGH Kit and the BioPrime® kit generated virtually identical chromosomal segmentation profiles (Figure 3). As the cyanine dye nucleotides are provided in the Enzo's all-in-one kit, reproducible and robust results are obtained with significant savings in cost and convenience.



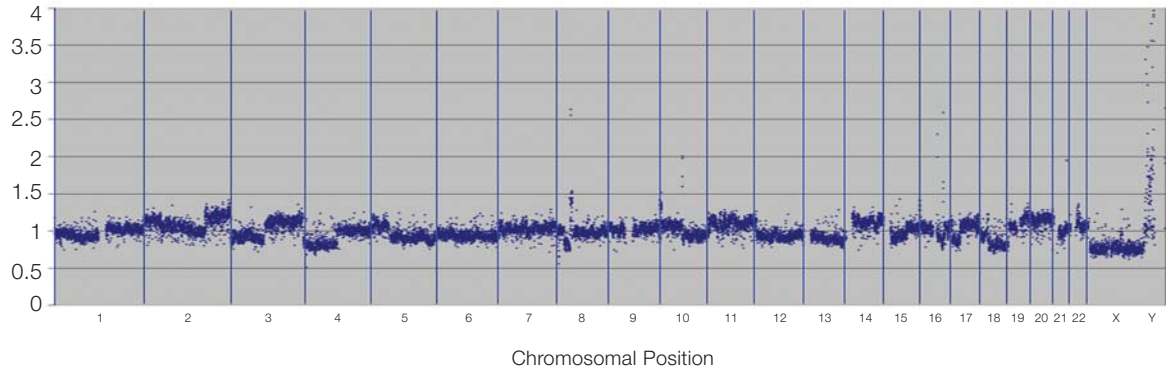
**FIGURE 2:** Comparison of the performance of ENZO's CGH Labeling Kit for BAC Arrays and Invitrogen™'s BioPrime® Array CGH Genomic DNA Labeling System. Fig 2A and 2B. 1 µg of genomic DNA was labeled with either cyanine-3-dUTP or cyanine-5-dUTP according to manufacturer's suggested protocol. (BioPrime®: 2 hr with dye nucleotides obtained from Perkin-Elmer®; Enzo: 4 hr with Enzo dye nucleotides provided in kit). For comparison, all sets of labeled DNAs were purified on QIAquick® columns from QIAGEN®.



**FIGURE 3:** Comparison of the array CGH performance of ENZO's CGH Kit for BAC Arrays and Invitrogen™'s BioPrime® Array CGH Genomic DNA Labeling System. Fig 3A and 3C. Chromosomal segmentation analysis performed by researchers at Roswell Park Cancer Institute on 19K BAC Arrays from 1 µg of cyanine-labeled tumor DNA vs. 1 µg of cyanine-labeled DNA normal reference DNA labeled with either Enzo's CGH Labeling Kit for BAC arrays (3A and 3B) or Invitrogen™'s BioPrime® Kit with Perkin-Elmer® cyanine-3-dUTP and cyanine-5-dUTP (3C and 3D). 3B and 3D. Chromosome 11 details from 3A and 3C, respectively.

## Alternate Protocol for Dilute Genomic DNA Samples

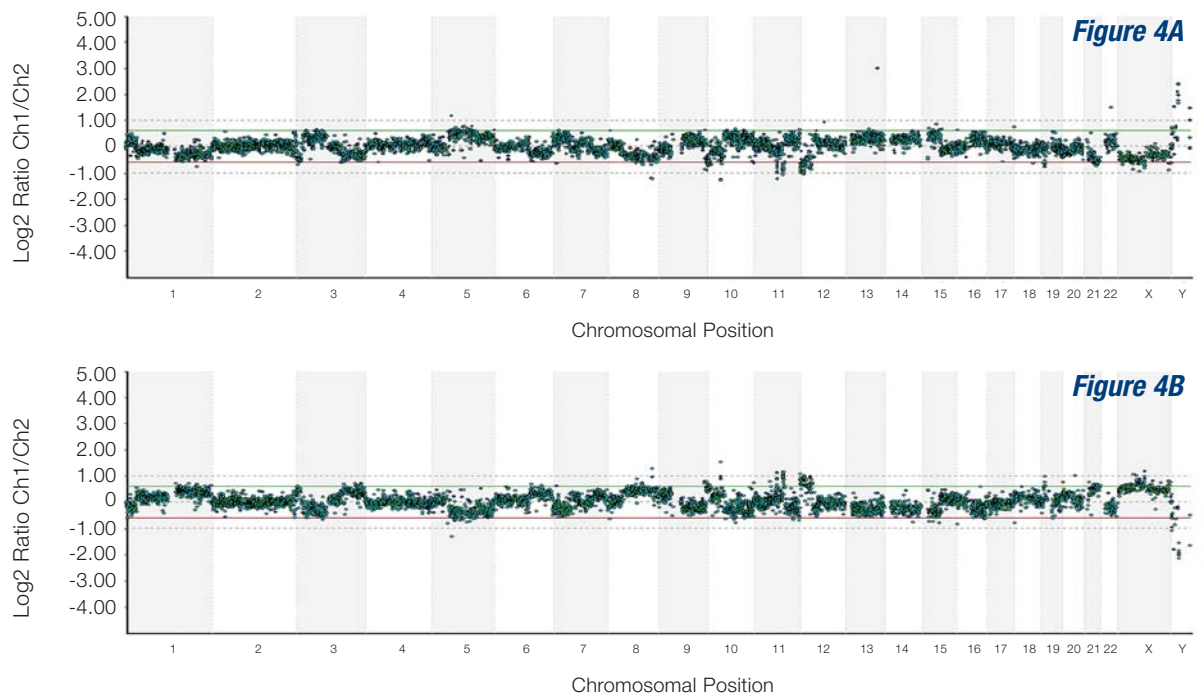
Enzo's CGH Labeling Kit for BAC arrays also offers an alternate protocol to accommodate dilute genomic DNA samples in a 100 ul labeling reaction. This built-in flexibility allows the user to streamline experiments without compromising results.



**FIGURE 4:** Researchers at Roswell Park Cancer Institute performed array-CGH analysis with Enzo's CGH Labeling Kit for BAC arrays using the dilute DNA protocol. Chromosomal segmentation profile from 1.0 ug of cyanine-labeled genomic tumor DNA vs. 1.0 ug of cyanine-labeled genomic normal reference DNA.

## Labeling Genomic DNA from FFPE Samples

Genomic DNAs isolated from formalin-fixed paraffin-embedded (FFPE) samples for array-CGH analysis are often damaged due to cross-linking and breaks induced by the fixation and embedding procedure. Nevertheless, genomic FFPE DNAs of high enough quality can be cyanine-labeled for array-CGH analysis with excellent results.



**FIGURE 5:** Direct Labeling of genomic DNA from FFPE samples. Chromosomal segmentation profile from 850 ng of cyanine-labeled genomic breast tumor FFPE DNA vs. 850 ng of cyanine-labeled genomic normal male reference DNA.

## References

1. Auer, H. et. al. (2007) *BMC Genomics* 8:111.
2. Buffart, T.E. et. al. (2007) *Cellular Oncology* 4:351-359.
3. Schoumans, J. et. al. (2006) *Br. J. Haematol.* 135: 492-499.

## Ordering Information

For more information or to place an order, contact your Enzo Life Sciences' Alliance Manager at 1.800.221.7705 or 1.631.694.7070 or visit our web site at [www.enzolifesciences.com](http://www.enzolifesciences.com)

Catalog Number	Description	Quantity
42670	CGH Labeling Kit for BAC Arrays	2 x 10 Reactions

## Product Components

Enzo's CGH Labeling Kit for BAC Arrays contains all the necessary components for effective cyanine-labeling of genomic DNA for array-CGH analysis.

Component	Description	Quantity
Vial 1	Primers/Reaction Buffer	2 x 400 µl
Vial 2	Cyanine-3-dUTP Nucleotide Mix	2 x 50 µl
Vial 3	Cyanine-5-dUTP Nucleotide Mix	2 x 50 µl
Vial 4	Klenow Exo-DNA Polymerase	1 x 20 µl
Vial 5	Stop Buffer	1 x 100 µl
Vial W	Nuclease-free Water	1 x 1 ml

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This product and the use of this product is covered by one or more claims of Enzo patents, including but not limited to the following: U.S. Patent No. 4,994,373; Canadian Patent No. 1,309,672; and patents pending..

### Additional Note:

The Enzo CGH Labeling Kit for BAC Arrays contains Enzo's cyanine-3-dUTP and cyanine-5-dUTP. These proprietary nucleotides are prepared utilizing a novel allylic reactive group for direct attachment of the dye to a mercurated nucleotide through a novel semi-rigid linker arm.

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Enzo Life Sciences, Inc.  
10 Executive Boulevard  
Farmingdale, NY 11735  
Toll Free: 1.800.221.7705  
International: 1.631.694.7070  
Fax: 1.631.694.7501  
[enzolifesciences@enzobio.com](mailto:enzolifesciences@enzobio.com)  
[www.enzolifesciences.com](http://www.enzolifesciences.com)