

RELIABLE, YET FLEXIBLE DNA LABELING

Nick Translation DNA Labeling System

ENZ-42910

50 Reactions

HIGHLIGHT

- Proven and many times cited application
- Broad range of fluorophore- and biotin-labeled nucleotides to select from
- Individual reaction components in the kit allow maximum flexibility in optimization
- Consistently delivers exceptionally good incorporation and bright signal

Enzo Life Sciences' Nick Translation DNA Labeling System includes all the necessary reagents for simple and efficient enzymatic labeling of double stranded DNA using *E. coli* DNA polymerase I. Nick translation labeling is accomplished in a highly efficient, easy-to-perform and rapid manner. The standardized protocol is suitable for generating probes for both direct and indirect detection methods, through incorporation of a wide range of fluorophore- and biotin-labeled nucleotides. The kit design also provides flexibility and allows for optimization of both product size and labeled nucleotide incorporation thru adjustment of the ratio of enzymes, labeled dUTP and dTTP. The labeled DNA generated by this kit is suitable for use in fluorescent *in situ* hybridization (FISH), microarray gene expression profiling, screening gene banks by colony- or plaque-hybridization and other common nucleic acid hybridization applications.

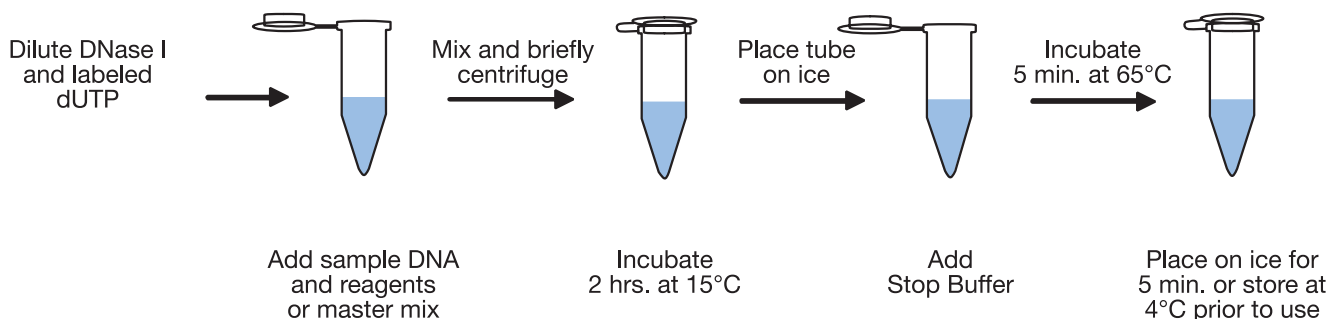


FIGURE 1: SYSTEM OVERVIEW. The Enzo Life Sciences' Nick Translation DNA Labeling System contains individualized components, including DNase I, DNA Polymerase I and labeled dUTP. This allows optimization beyond the recommended reaction protocol included with the kit. DNase I introduces randomly distributed nicks to double stranded DNA at low enzyme concentrations. The 5' → 3' exonuclease activity of Polymerase I removes nucleotides from the 3' side of the nick while synthesizing a partial new complementary strand using the 3'-OH termini as primer. In the presence of dye- or biotin-labeled dUTP, Polymerase I incorporates labeled dUTP instead of dTTP. The well-balanced nuclease/polymerase activities of the enzyme mix ensure the generation of highly labeled double stranded DNA fragments.

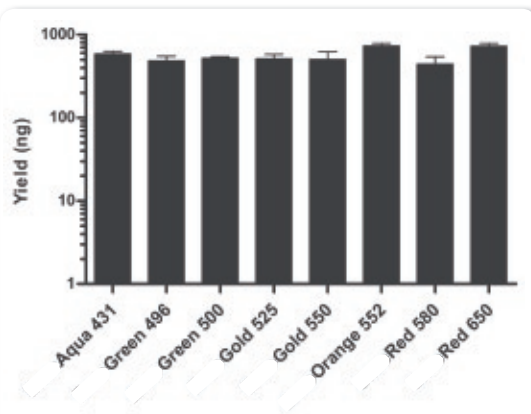


FIGURE 2: Enzo Life Sciences' Nick Translation DNA Labeling System allows for consistent production of labeled DNA probes. Column purified probes produced using BAC DNA (1 μ g) demonstrate significant yields and show no bias among labeled nucleotides. Any variance between the amount of starting material and labeled probe is attributed to loss during column purification.

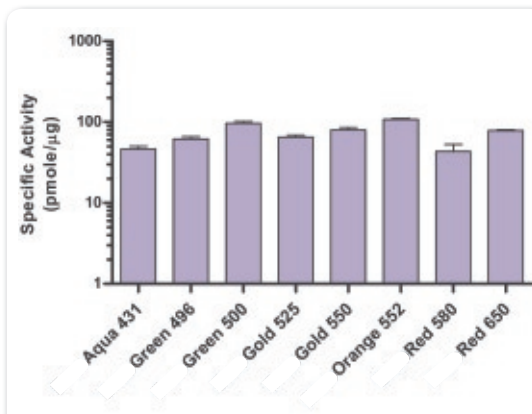


FIGURE 3: Column purified labeled FISH probes demonstrate consistent incorporation and specific activity. The nick translation reaction enables rapid and consistent production of labeled DNA, accommodates a wide range of labeled nucleotides and is ideal for multiplexed applications.

Related Products

| Product | Prod. No. | Size |
|--|-----------|--------------|
| Aqua 431 dUTP | ENZ-42853 | 25 nmol |
| Green 496 dUTP | ENZ-42831 | 25 nmol |
| Green 500 dUTP | ENZ-42845 | 25 nmol |
| Gold 525 dUTP | ENZ-42843 | 25 nmol |
| Gold 550 dUTP | ENZ-42521 | 25 nmol |
| Orange 552 dUTP | ENZ-42842 | 25 nmol |
| Red 580 dUTP | ENZ-42844 | 25 nmol |
| Red 650 dUTP | ENZ-42522 | 25 nmol |
| Bio-11-dUTP | ENZ-42806 | 50 nmol |
| Bio-16-dUTP | ENZ-42811 | 50 nmol |
| <i>BioProbe</i> [®] 3'-Oligonucleotide Labeling System Reagent Pack | ENZ-42730 | 25 Reactions |
| <i>BioProbe</i> [®] Random Primed DNA Labeling System Reagent Pack | ENZ-42720 | 25 Reactions |
| CGH Labeling Kit for BAC Arrays | ENZ-42670 | 20 Reactions |
| CGH Labeling Kit for Oligo Arrays | ENZ-42671 | 20 Reactions |
| <i>In Situ</i> Hybridization Buffer | ENZ-33808 | 10 mL |
| <i>In Situ</i> Hybridization Wash Reagent | ENZ-33809 | 30 mL |
| Proteinase K | ENZ-33801 | 2 x 5 mg |

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