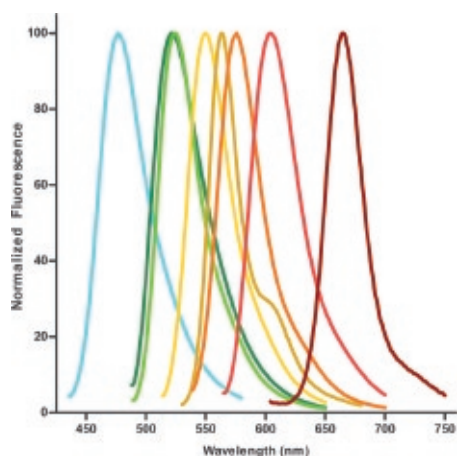


# FLUORESCENT LABELED dUTPs

## PEAK PERFORMANCE FOR LABELING OF DNA AND RNA

- Eight distinct colors to choose from, spanning the visible light spectrum
- Exceptionally high quantum yields and molar extinction coefficients
- Excellent water solubility, high signal intensity, good photostability
- Suitable for a wide range of molecular biology and cytogenetics applications

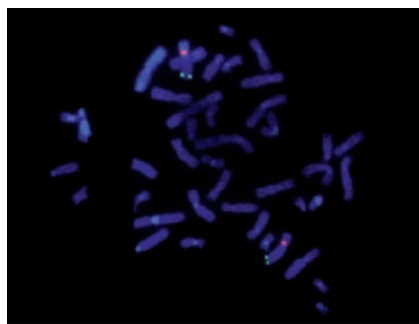
Direct labeling approaches using Enzo Life Sciences' fluorescent labeled dUTPs are well recognized as superior to analogous methods using hazardous radioisotope-labeled nucleotides or cumbersome indirect two-step labeling methods using aminoallyl dUTP/dye-NHS ester labeling combinations. The dye-dUTPs are suitable for a wide range of molecular biology and cytogenetics applications, including nick translation, random priming, PCR, 3'-end labeling, RNA transcript labeling and labeling of BAC probes for *in situ* hybridization. The fluorescent labeled dUTPs are modified at the C-5 position of uridine via an aminoallyl linker, which provides a spacer between the dye and nucleotide that minimizes interactions between them, thus promoting good incorporation into DNA by polymerases. The excellent stability and quantum yields of the fluorescent labeled dUTPs, combined with their high incorporation rates, make them the ideal choice for a broad range of nucleic acid labeling applications. Probes generated with the fluorescent dUTPs are especially suitable for multi-color detection techniques, such as *in situ* hybridization and microarray analysis.



**FIGURE 1: FLUORESCENT EMISSION.** Fluorescence emission profiles of the eight available fluorescent labeled dUTPs. The dye-dUTPs are designed to perform especially well in multi-color applications, such as *in situ* hybridization and microarray analysis.

Dye	Description	Abs. Max.	Em. Max.	Ext. Coeff. (M <sup>-1</sup> cm <sup>-1</sup> )
Aqua 431	DEAC	431 nm	480 nm	50,000
Green 496	Fluorescein	496 nm	520 nm	85,000
Green 500	Rhodamine Green	500 nm	522 nm	78,000
Gold 525	Carboxyrhodamine 6G	525 nm	551 nm	92,000
Gold 550	Enhanced Cyanine 3	550 nm	564 nm	150,000
Orange 552	TAMRA	552 nm	576 nm	60,000
Red 580	ROX	580 nm	603 nm	75,000
Red 650	Enhanced Cyanine 5	650 nm	662 nm	250,000

**TABLE 1: PHOTOPHYSICAL CHARACTERISTICS.** Benchmark photophysical characteristics of the dye-dUTPs, highlighted in Figure 1. Of particular note are Gold 550 and Red 650, Enzo Life Sciences' proprietary dyes optimized for applications commonly reserved for Cy3 and Cy5 dyes.



**FIGURE 2: CYTOGENETICS.** *In situ* hybridization with FISH probes created with Enzo Life Sciences' fluorescent dye-dUTPs and Nick Translation DNA Labeling System. The BAC probe is labeled with Green 496 dUTP, while the CEN8 probe is labeled with Orange 552 dUTP. Chromosomes were counterstained with DAPI (Prod. No. ENZ-52404) in an anti-fade mounting medium.

## Enzo® Fluorescent Nucleotides

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

## Related Products

Product	Prod. No.	Size
Nick Translation DNA Labeling System	ENZ-42910	50 Reactions
CGH Labeling Kit for BAC Arrays	ENZ-42670	20 Reactions
CGH Labeling Kit for Oligo Arrays	ENZ-42671	20 Reactions
Cyanine 3-NHS Ester Pack	ENZ-42541	12 x 50 nmol
Cyanine 5-NHS Ester Pack	ENZ-42542	12 x 50 nmol
<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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