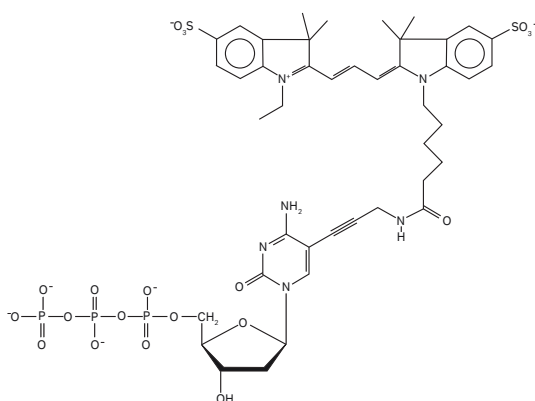


# Amersham CyDye fluorescent nucleotides

## NUCLEIC ACID LABELLING

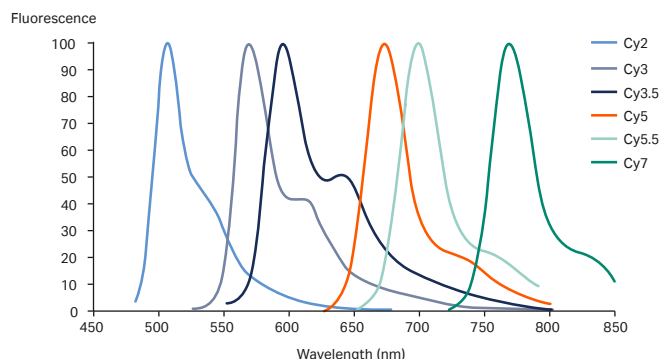
Amersham™ CyDye™ fluorescent nucleotides from Cytiva comprise a CyDye fluor linked to a ribo or deoxyribo nucleotide via an amide bond (Figure 1). These reagents have been widely used for fluorescence analysis within genomic, proteomic, and cellular research, and have been cited extensively in peer-reviewed publications.



**Fig 1.** Structure of Cy3 labelled dCTP nucleotide.

## The CyDye fluorescent dye range

CyDye fluorescent dyes share a core structure consisting of two aromatic rings joined by a linking bridge. This linking bridge varies in length resulting in emission spectra that span the spectrum of visible light (Figure 2). An important modification is aromatic ring sulfonation, which increases the water solubility and decreases fluorescence self-quenching.



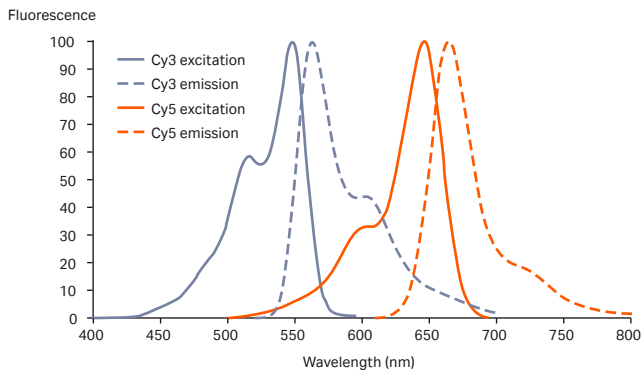
**Fig 2.** CyDye-based fluorescent dyes are a chemically related group of dyes, whose emission spectra span the spectrum of visible light.

## CyDye labelled nucleotides for your convenience

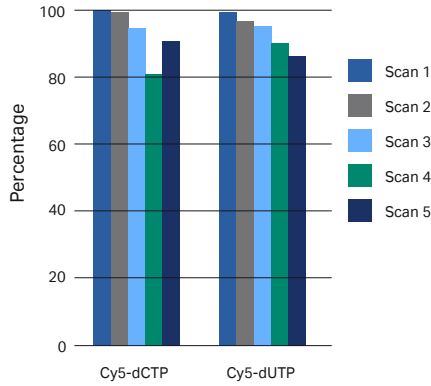
Amersham CyDye fluorescent nucleotides are optimized for labeling DNA and RNA probes to be used in multicolor detection studies such as microarrays, array CGH, and FISH.

The benefits are:

- High extinction coefficients ensure bright dyes with strong fluorescent signals
- Clear spectral separation allows excitation and detection of multiple dyes in the same sample (Figure 3)
- Unaffected by choice of buffer or pH
- Photostable when stored appropriately enabling fluorescent assays to be reread over time (Figure 4)
- High purity ensures long term stability at -20°C



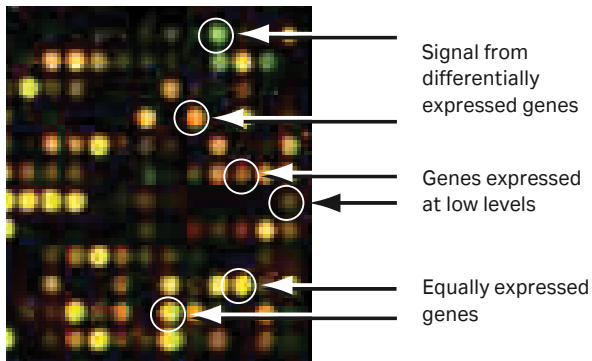
**Fig 3.** CyDye fluors have narrow emission bands delivering good spectral separation during multicolor assays.



**Fig 4.** Scans performed once a day, for five days, show < 5% drop per scan in Cy<sup>™</sup>5 fluorescence intensity.

## CyDye labelled nucleotides are suitable for microarray applications

An example of a dual colour microarray application using Cy3 and Cy5 labelled nucleotide is illustrated below:



**Fig 5.** Two-color microarray hybridization signals using red (Cy5) and green (Cy3) dyes. Equal spot signals will appear yellow. Green and red denote differences in relative abundance in favor of one or the other sample.

<b>Applications</b>	Nucleic acid labelling: Microarrays, Array CGH, FISH					
<b>Concentration</b>	1 mM Solution					
<b>Buffer</b>	10 mM Sodium Phosphate pH 7.0					
<b>Dye label</b>	<b>Cy3-dCTP</b>	<b>Cy3-dUTP</b>	<b>Cy3.5-dCTP</b>	<b>Cy5-dCTP</b>	<b>Cy5-dUTP</b>	<b>Cy5.5-dCTP</b>
<b>Excitation max (nm)</b>	550	550	581	649	649	675
<b>Emission max (nm)</b>	570	570	596	670	670	694
<b>Color</b>	Red	Red	Red	Blue	Blue	Blue
<b>Purity by chromatography (%)</b>	>95	>80	>80	>95	>95	>80
<b>Extinction coefficient (M<sup>-1</sup> cm<sup>-1</sup>)</b>	150000	150000	150000	250000	250000	250000
<b>Shipping and storage (°C)</b>	-20					
<b>Handling</b>	<ul style="list-style-type: none"> <li>• Protect from light</li> <li>• Minimize freeze/thaw cycles</li> <li>• Wear gloves</li> </ul>					

## Ordering information

Product description	Quantity	Code number
Cy3-dCTP	25 nmol	PA53021
	250 nmol	PA53031
Cy5-dCTP	25 nmol	PA55021
	250 nmol	PA55031
Cy3-dUTP	25 nmol	PA53022
	250 nmol	PA53032
Cy5-dUTP	25 nmol	PA55022
	250 nmol	PA55032
Multipacks dCTP	5 × 25 nmol Cy3-dCTP + 5 × 25 nmol Cy5-dCTP	PA55321
Multipacks dUTP	5 × 25 nmol Cy3-dUTP + 5 × 25 nmol Cy5-dUTP	PA55322
Cy3.5-dCTP	25 nmol	PA53521
Cy5.5-dCTP	25 nmol	PA55521

Custom bulk pack sizes and custom Cy dye labeling are available upon request. For more information please visit the following website: [cytiva.com/customandcontractmanufacturing](http://cytiva.com/customandcontractmanufacturing).

### cytiva.com

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