

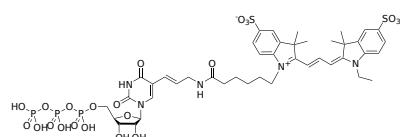
Cy3-UTP

Catalog Number: 17112, 17113
Unit Size: 25 nmoles, 100 nmoles

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	6 months upon receiving

Chemical Properties

Appearance	Liquid red
Molecular Weight	1151.98
Soluble In	Water
Chemical Structure	 The chemical structure of Cy3-UTP is shown. It consists of a uridine triphosphate (UTP) moiety linked via its 3'-OH group to the 5' carbon of a Cy3 dye. The Cy3 dye is a cyanine dye with a central nitrogen atom (N+) bonded to two phenyl groups, each substituted with a sulfonyl group (SO2H).

Spectral Properties

Excitation Wavelength	555 nm
Emission Wavelength	569 nm

Applications

Cy3-UTP is a fluorescently labeled nucleotide that serves as an alternative to UTP in T7 RNA polymerase-mediated in vitro transcription, enabling the generation of labeled RNA probes. These probes are well-suited for multicolor fluorescence analysis, including dual-color expression arrays, microarrays, fluorescence in situ hybridization (FISH), chromosome identification, whole chromosome painting, karyotyping, and gene mapping.

Cy3-UTP incorporates efficiently into RNA transcripts via T7 RNA polymerase, imparting fluorescent properties that facilitate the tracking of RNA distribution, localization, and dynamics. With excitation and emission maxima at 555 nm and 569 nm, respectively, Cy3-UTP-labeled mRNA is readily detectable under UV light without the need for additional staining following gel electrophoresis. Furthermore, Cy3-UTP enables single-molecule fluorescence resonance energy transfer (FRET) measurements, allowing real-time monitoring of co-transcriptional RNA folding. Cyanine-labeled nucleotides, including Cy3-UTP, exhibit bright, intense fluorescence with narrow emission spectra, making them highly suitable for multiplexed fluorescence imaging applications.