YO3-3PEG-Biotin Fluorophore

Cat. No. G7957

Store at -20°C. Protect from light.

Product Description

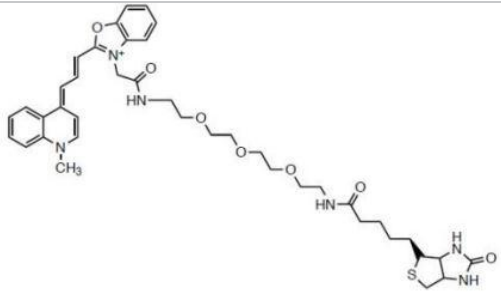
YO3-3PEG-Biotin is a small bifunctional fluorophore that has low unbound fluorescence. When bound to Mango aptamers, it exhibits peak excitation maxima of 580 nm (with additional excitation at 260 nm) and peak fluorescence emission of 620 nm). Mango aptamers enhance the fluorescence of YO3-3PEG-Biotin (binding requires KCl, 61-fold brighter with Mango III A10U), emitting in the orange region of the visible spectrum[1]. YO3-3PEG-Biotin may serve as a FRET acceptor when paired with GFP-emitting fluorophores[2].

Cat. No.	Product	Quantity
G7957	YO3-3PEG-Biotin Fluorophore	250 µM (100 µl)

Applications

Application	Recommended Final Concentration of RNA Mango Dye
In Vitro Fluorescence Assays	100 nM – 200 nM
In Vivo Cellular Imaging	100 nM – 200 nM
In Vitro Transcription (IVT) and RNA Purification	50 nM – 200 nM
FRET Assay	50 nM – 500 nM

Product Specifications

Structure	
Molecular Mass	872.96
Formula	$C_{42}H_{51}F_3N_6O_9S$
Purity	>95% (by HPLC)
Form	Liquid, in DMF
Solubility	DMF, DMSO, 10% Acetonitrile or MeOH-CH_2-Cl_2
Shelf Life	Three (3) months from receipt.
General Notes	Do not store in water. May break down in water.

Properties of the Fluorophore-Aptamer Complex

Max Absorbance	580 nm
Excitation/Emission Wavelength (unbound)	603/612 nm
Excitation/Emission Wavelength (bound)	595/620 nm
Extinction Coefficient at 580 nm (aqueous buffer, based on mass)	92,000 M^{-1} cm^{-1} [1]
Binding Affinity to Mango I Aptamer	20 nM
Binding Affinity to Mango III Aptamer	10 ± 2 nM
Binding Affinity to Mango III (A10U) Aptamer	125 ± 6 nM [1]
Fluorescent Enhancement, Bound to Mango III (A10U) Aptamer	61 ± 2 [1]

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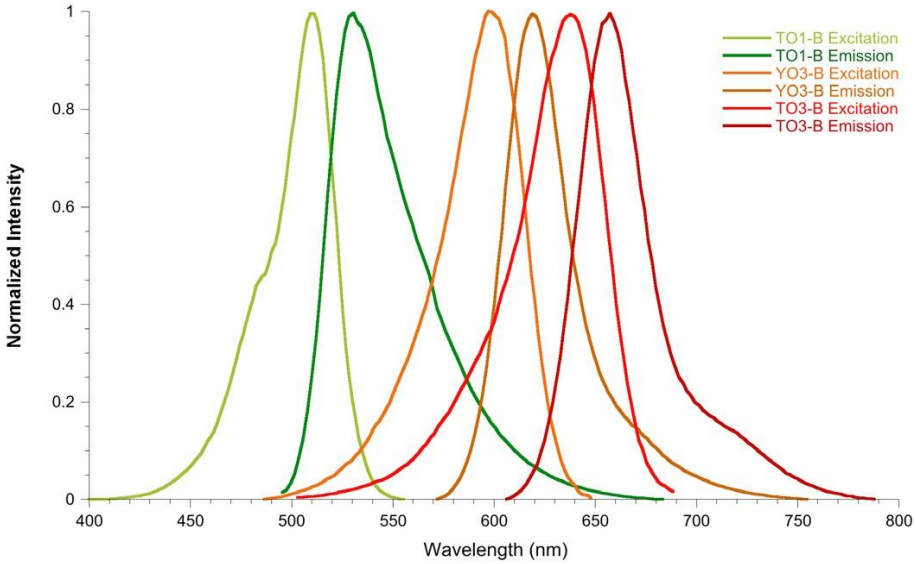

Patent

US11434490B2

References

1. Unpublished results, Unrau Laboratory. **2.** Jepsen et al. (2018). Development of a genetically encodable FRET system using fluorescent RNA aptamers. Nat. Commun. 9,18. **3.** Jeng et al. (2018). Advances in fluorogenic RNA aptamer systems for live cell imaging: Towards orthogonality and multicolour applications. Science: Department of Molecular Biology and Biochemistry

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