

YO3-3PEG-Biotin Fluorophore

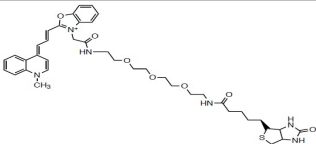
Fluorophore for the RNA Mango System

Cat. No.	Description	Quantity
G957	YO3-3PEG-Biotin Fluorophore	0.5 mg/ml (500 µl)

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 spectrum¹. YO3-3PEG-Biotin may serve as a FRET acceptor when paired with GFP-emitting fluorophores².

Product Specifications

Structure	
Molecular Mass	872.96
Formula	C ₄₂ H ₅₁ F ₃ N ₆ O ₉ S
Purity	>95% (by HPLC)
Form	0.5 mg/ml in DMF
Solubility	DMF, DMSO, 10% Acetonitrile or MeOH-CH ₂ Cl ₂
Storage	Store at -20°C . Protect from light. Do not store in water.
Shelf life	1 year from date of shipment. 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 ³	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⁾

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 Unpublished results, Unrau Laboratory. 2.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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