

TO1-3PEG-Desthiobiotin Fluorophore

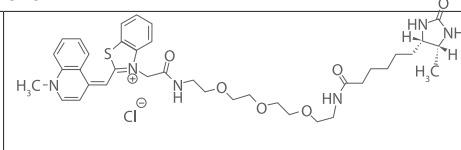
Fluorophore for the RNA Mango System

Cat. No.	Description	Quantity
G956	TO1-3PEG-Desthiobiotin Fluorophore	0.5 mg/ml (500 µl)

Description

TO1-3PEG-Desthiobiotin is a small bifunctional fluorophore that allows for the recovery of native RNA complexes while simultaneously rendering them highly fluorescent¹. The bound fluorescent complex of Mango I and TO1-3PEG-Desthiobiotin is bright^{2,3} and when bound next generation aptamers (Mango III and IV^{XXref coming soonXX}) have a brightness that exceeds that of enhanced GFP. When bounded to streptavidin, can be eluted by the addition of free biotin allowing for the recovery of complexes that can be further purified (i.e. size chromatography).

Product Specifications

Structure	
Molecular Mass	719.9159
Formula	C ₃₈ H ₅₁ N ₆ O ₆ 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.
Shelf life	1 year from date of shipment

Properties of the Fluorophore-Aptamer Complex

Quantum Yield for the Mango I complex	$\Phi_{\text{bound}} = 0.14$
Binding Affinity to Mango I Aptamer	3 nM (KCl required)
Fluorescent Enhancement when Bound to Mango I Aptamer	~1000
Extinction coefficient when Bound to Mango I Aptamer	$\epsilon_{510} = 77,500 \text{ M}^{-1} \text{ cm}^{-1}$
Brightness when Bound to Mango I Aptamer	$B_{535} = 11,000 \text{ M}^{-1} \text{ cm}^{-1}$

Patent Provisional Patent Application Number 62489346

References

1. Panchapakesan *et al.* (2017). Ribonucleoprotein Purification and Characterization using RNA Mango. *RNA*, 1592-1599. 2. Dolgoshina *et al.* (2014). RNA Mango Aptamer-Fluorophore: A Bright, High-Affinity Complex for RNA Labeling and Tracking. *ACS Chem. Biol.* 9 (10): 2412-2420. 3. Jeng *et al.* (2016). Fluorophore ligand binding and complex stabilization of the RNA Mango and RNA Spinach aptamers. *RNA*, 22: 1884-1892.