Tribioscience

TO1-3PEG-Desthiobiotin Fluorophore

Catalog	Unit
TBS6107	100 uL

Description

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

The TO dye has a number of other desirable properties including:

- small size
- lack of toxicity
- plasma and nuclear membrane permeability
- short intracellular half-life
- the accessibility of a broad wavelength range simply via substitutions and alterations to the TO structure

TO1-biotin is the standard variety of TO dye for in vitro and in vivo RNA Mango and RNA Peach experiments.

Component

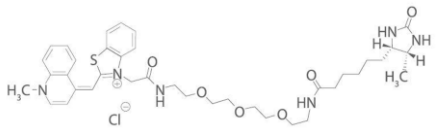
Product	Quantity
TO1-3PEG-Desthiobiotin Fluorophore	250 µM (100 µl)

Store at -20°C. Protect from light.

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	719.9159
Formula	$C_{38}H_{51}N_6O_6S+$
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

Quantum Yield for the Mango I Complex	Φbound = 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	ε_{510} = 77,500 $M^{-1}cm^{-1}$
Brightness when Bound to Mango I Aptamer	B_{535} = 11,000 $M^{-1}cm^{-1}$

Patent

US11434490B2

For research use only

Tribioscience, Inc.; 365 San Aleso Ave, Sunnyvale, CA 94085 Phone: 408-498-0197
info@tribioscience.com; www.tribioscience.com