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Product information: SiR-tetrazine (SC008)

Clickable SiR derivative for custom conjugate synthesis or live cell staining.

Introduction

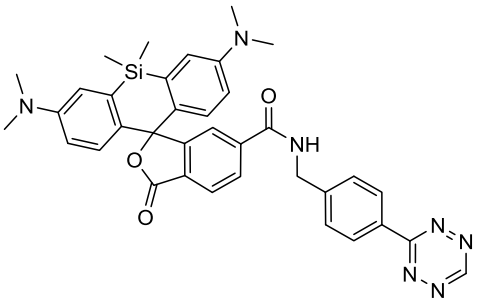
SiR-tetrazine is the 4-(1,2,4,5-tetrazin-3-yl)benzylamino derivative of the fluorophore silicon rhodamine (SiR)[1)]. Sir-tetrazine is cell permeable and reacts readily with dienophiles such as trans cyclooctene (TCO), bicyclo[6.1.0]non-4-yn (BCN) and norbornene (Nor) derivatives. Small molecules, peptides, oligonucleotides or proteins bearing the appropriate dienophile can be conjugated to SiR-tetrazine even on live cells. The key features of SiR-tetrazine are i) far-red absorption and emission wavelengths, ii) high extinction coefficient, iii) high photostability, iv) fluorogenic character, v) cell permeability. and vi) compatibility with superresolution microscopy (STED & SIM and STORM)[2)]. The combination of those properties put SiR-tetrazine at the leading edge of excellence.

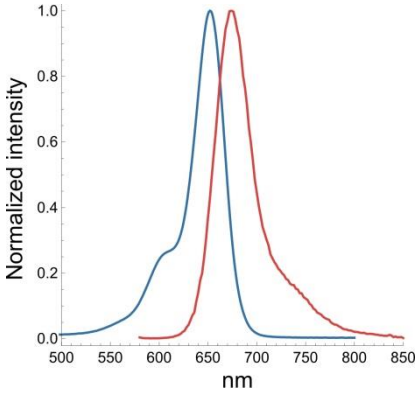
Storage & Handling

Store the compound below -20°C upon receipt. Prepare solutions of the compound using anhydrous DMSO. Keep solutions of the compound below -20°C after use. Vials should be allowed to warm to room temperature before opening. When stored properly, the compound should be stable for several months. Note: DMSO solutions should be handled with particular caution as DMSO is known to facilitate the entry of organic molecules into tissues. Dispose of these reagents in compliance with all pertaining local regulations.

Physical properties

λ_{Abs}	652 nm
λ_{Em}	674 nm
ε_{max}	$1.0 \cdot 10^5$ $mol^{-1} \cdot cm^{-1}$
MW	641.8 g/mol
MF	$C_{36}H_{35}N_7O_3Si$





References:

1. A near-infrared fluorophore for live-cell super-resolution microscopy of cellular proteins G. Lukinavičius et al., *Nature Chemistry*, 5, 132–139 (2013).

2. Superresolution imaging of the Golgi in live cells with a bioorthogonal ceramide probe. R. S. Erdmann et al., Angew. Chem. Int. Ed. 53: 10242–10246 (2014).

3. Genetic Code Expansion Enables Live-Cell and Super-Resolution Imaging of Site-Specifically Labeled Cellular Proteins, C. Uttamapinant et al., *J. Am. Chem. Soc.*,137 (14), pp 4602–4605 (2015)

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