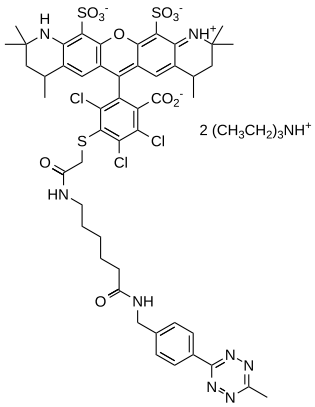
XFD546 Tetrazine

Catalog Number: 70058
Unit Size: 1 mg

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	12 months upon receiving

Chemical Properties

Appearance	Solid
Molecular Weight	1346.94
Soluble In	DMSO
Chemical Structure	

Spectral Properties

Excitation Wavelength	561 nm
Emission Wavelength	572 nm

Applications

XFD546, manufactured by AAT Bioquest, is structurally similar to Alexa Fluor™ 546 (Thermo Fisher). It exhibits bright orange fluorescence and is readily excited by laser lines at 488 nm or 532 nm, making it highly suitable for applications such as fluorescence microscopy and flow cytometry. XFD546 demonstrates excellent aqueous solubility and pH-insensitivity over a broad range (pH 4–10), ensuring stable signal generation under varying experimental conditions. Additionally, the dye enables high molar ratio conjugation to proteins with minimal fluorescence quenching, facilitating the generation of brighter conjugates for enhanced detection sensitivity. With its high fluorescence quantum yield and superior photostability, XFD546 is particularly advantageous for detecting low-abundance biological targets, providing researchers with improved sensitivity and precision in quantitative fluorescence-based assays.

XFD546 tetrazine is particularly useful for labeling TCO-modified biomolecules under copper-free conditions. It reacts with TCO-functionalized molecules, forming a stable conjugate via a dihydropyrazine moiety. This click reaction is favored over others due to its extremely fast kinetics and higher yields under mild reaction conditions, making it a popular choice for researchers.