XFD647 Tetrazine

Catalog Number: 1736
Unit Size: 1 mg

Product Details

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

Chemical Properties

Appearance	Solid blue
Molecular Weight	1345.80
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	650 nm
Emission Wavelength	671 nm

Applications

XFD647, manufactured by AAT Bioquest, is a bright far-red flurosecent dye structurally identical to Alexa Fluor™ 647 (ThermoFisher). It is efficiently excited by the 594 nm or 633 nm laser lines and is compatible with RFP filters like Cy5, making it well-suited for applications such as fluorescence microscopy and flow cytometry. XFD647 exhibits excellent aqueous solubility and pH stability across a wide range (pH 4–10), ensuring robust signal reproducibility under diverse experimental conditions. The dye enables high-degree conjugation to biomolecules with minimal self-quenching, resulting in enhanced fluorescence intensity and signal stability. Additionally, its high fluorescence quantum yield and superior photostability facilitate the sensitive detection of low-abundance targets, enhancing precision and sensitivity in quantitative fluorescence-based assays.

XFD647 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.