

## XFD594 Tetrazine

Catalog Number: 1733

Unit Size: 1 mg

### Product Details

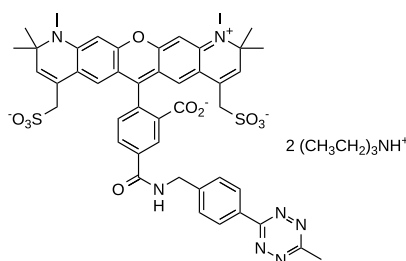
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Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	12 months upon receiving

### Chemical Properties

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Appearance	Solid
Molecular Weight	906.00
Soluble In	DMSO
Chemical Structure	



### Spectral Properties

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Excitation Wavelength	590 nm
Emission Wavelength	618 nm

### Applications

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XFD594, manufactured by AAT Bioquest, is structurally similar to Alexa Fluor™ 594 (Thermo Fisher). This bright red-fluorescent dye is efficiently excited by the 561 nm or 594 nm laser lines and is compatible with RFP filters like Texas Red. It demonstrates excellent solubility in aqueous solutions and is pH-insensitive across a broad range (pH 4–10), ensuring reliable and stable signal generation under diverse experimental conditions. XFD594 is particularly well-suited for multicolor fluorescence microscopy, flow cytometry, and advanced SRM imaging techniques like dSTORM, SIM, STED and TPE. It can be conjugated to proteins at high molar ratios with minimal self-quenching, resulting in brighter conjugates. Moreover, the superior fluorescence quantum yield and photostability of XFD594 make it ideal for detecting low-abundance biological targets, enabling greater precision and sensitivity in quantitative fluorescence assays.

XFD594 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.