XFD790 Tetrazine

Catalog Number: 70127
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	N/A
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	782 nm
Emission Wavelength	805 nm

Applications

XFD790, manufactured by AAT Bioquest, is a highly efficient near-infrared fluorescent dye that is structurally similar to Alexa Fluor™ 790 (Thermo Fisher). Spectrally analogous to indocyanine green (ICG) and IRDye™ 800, XFD790 demonstrates exceptional aqueous solubility and sustained fluorescence stability over a broad pH range (pH 4–10), ensuring consistent and reproducible performance across diverse experimental conditions. Its long-wavelength emission effectively mitigates background autofluorescence, thereby enhancing signal-to-noise ratios in complex biological matrices, including tissue samples. As the longest-wavelength fluorophore in the XFD series, XFD790 offers superior spectral separation from widely used far-red fluorophores such as iFluor® 647, XFD647, and allophycocyanin (APC), facilitating precise multicolor fluorescence analyses. Furthermore, its optical properties make it an excellent candidate for small animal in vivo imaging (SAIVI) and two-color western blot applications using the LI-COR™ Odyssey™ infrared imaging system.

XFD790 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.