

XFD790 TCO

Catalog Number: 70126

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 | N/A |
| Soluble In | DMSO |

Spectral Properties

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|-----------------------|--------|
| 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 identical to Alexa Fluor™ 790 (ThermoFisher). 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 TCO is particularly useful for labeling tetrazine-modified biomolecules under copper-free conditions. It reacts with tetrazine-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.