

FITC-xtra maleimide

Catalog Number: 70180

Unit Size: 1 mg

Product Details

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

Chemical Properties

Appearance	Solid orange-red
Molecular Weight	645.56
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	498 nm
Emission Wavelength	526 nm

Applications

FITC is widely used for creating green fluorescent bioconjugates; however, it has notable limitations, including significant photobleaching during microscopy and a fluorescence signal that is highly sensitive to pH variations. FITC-xtra addresses these challenges, providing a robust enhancement over traditional FITC. Bioconjugates prepared with FITC-xtra demonstrate significantly increased brightness and superior photostability compared to those labeled with standard FITC. Importantly, the fluorescence of FITC-xtra remains stable across a pH range of 4 to 10, addressing the limitation of FITC, which only reaches maximum fluorescence at pH levels above 9. Alongside these enhancements, FITC-xtra retains spectral properties nearly identical to FITC, ensuring compatibility. Moreover, FITC-xtra provides a higher conjugation yield under mild conditions compared to FITC. Like 5-FITC, FITC-xtra antibody conjugates are ideally excited by the 488 nm laser line, making them an excellent alternative to traditional FITC-labeled conjugates. When tested under identical conditions, FITC-xtra antibody conjugates consistently deliver higher signal-to-background ratios than their FITC counterparts.

The maleimide derivative of FITC-xtra is widely used for labeling biomolecules with free thiol (SH) groups, including antibodies, proteins, thiol-modified oligonucleotides, and low molecular weight ligands. Maleimides react readily with sulfhydryl groups, forming stable thio-ether bonds between the dye and the biomolecule, facilitating robust and reliable labeling for diverse experimental applications.