

FastClick™ XFD750 Alkyne

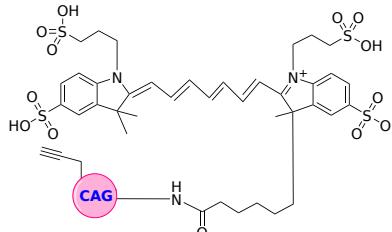
Catalog Number: 72885

Unit Size: 1 mg

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	24 months upon receiving

Chemical Properties

Appearance	Solid
Molecular Weight	1307.49
Soluble In	DMSO
Chemical Structure	 <p>[CAG=Click-Assisting Group]</p>

Spectral Properties

Excitation Wavelength	752 nm
Emission Wavelength	776 nm

Applications

FastClick™ XFD750 Alkyne contains both the CAG moiety of FastClick (for assisting click efficiency) and Alexa Fluor® 750 fluorophore (as the fluorescence tag) for developing Alexa Fluor® 750-based fluorescent probes. It readily reacts with an azido-containing biomolecule under extremely mild conditions. Alexa Fluor® 750 is a commonly used near infrared (NIR) fluorophore for labeling proteins, nucleic acids, or other biomolecules. It has moderate photostability and excitation that matches the common 750 nm laser line. Its conjugates are widely used for *in vivo* imaging and flow cytometry applications in combination with the widely available Cy7 filter set. It is a water-soluble Cy75 derivative that has pH-insensitive fluorescence from pH 4 to pH 10. Alexa Fluor® 750 dye is particularly useful in stochastic optical reconstruction microscopy (STORM), where it is an exceptional reporter for both dSTORM and nSTORM. It is also used in super-resolution microscopy (SRM) applications. Alexa Fluor® is a trademark of ThermoFisher Scientific. FastClick™ reagents have been developed by the scientists of AAT Bioquest for enhancing the yield and reaction speed of copper-catalyzed azide-alkyne cycloaddition (CuAAC) reaction. They contain a copper-chelating ligand that significantly stabilizes the Cu(I) oxidation state and thus accelerates the click reaction. They do not require the use of an external copper-chelator (such as the common THPTA or BTAA). The high concentration of copper chelators is known to have a detrimental effect on DNA/RNA, thus causing biocompatibility issues. The introduction of a copper-chelating moiety at the reporter molecule allows for a dramatic raise of the effective Cu(I) concentration at the reaction site and thus accelerates the reaction. Under extremely mild conditions the FastClick™ azides and alkynes react much faster in high yield compared to the corresponding conventional CuAAC reactions.