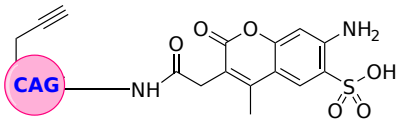
FastClick™ XFD350 Alkyne

Catalog Number: 72870
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	621.71
Soluble In	DMSO
Chemical Structure	

[CAG=Click-Assisting Group]

Spectral Properties

Excitation Wavelength	343 nm
Emission Wavelength	441 nm

Applications

FastClick™ XFD350 Alkyne contains both the CAG moiety of FastClick (for assisting click efficiency) and Alexa Fluor® 350 fluorophore (as the fluorescence tag) for developing Alexa Fluor® 350-based fluorescent probes. FastClick™ XFD350 Alkyne readily reacts with an azido-modified biomolecule under extremely mild conditions. Alexa Fluor® 350 is a commonly used blue fluorophore for labeling proteins, nucleic acids, or other biomolecules. It has moderate photostability and excitation that matches the 350 nm laser line. 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 BTTAA). 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. Click chemistry was developed by K. Barry Sharpless as a robust and specific method of ligating two molecules together. Two important characteristics make click chemistry attractive for assembling biomolecules. First, click reactions are bio-orthogonal, thus the click chemistry-functionalized biomolecules would not react with the natural biomolecules that lack a clickable functional group. Second, the reactions proceed with ease under mild conditions, such as at room temperature and in aqueous media.