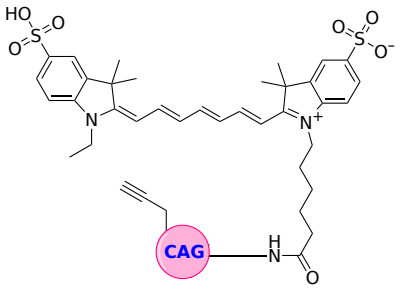
FastClick™ Cy7 Alkyne

Catalog Number: 72854
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	991.28
Soluble In	DMSO
Chemical Structure	

[CAG=Click-Assisting Group]

Spectral Properties

Excitation Wavelength	756 nm
Emission Wavelength	779 nm

Applications

FastClick™ Cy7 Alkyne contains both the moiety of FastClick (for assisting click efficiency) and Cy7 fluorophore (as the fluorescence tag) for developing Cy7-based fluorescent probes. It readily reacts with an azido-modified biomolecule under extremely mild conditions. Cy7 is one of the most common near infrared (NIR) fluorophores used for developing in vivo imaging probes. Cy7 antibody conjugates are widely used in fluorescence imaging and flow cytometric applications. 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.