

FastClick™ 6-ROX Alkyne

Catalog Number: 72864

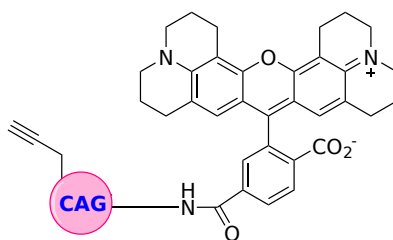
Unit Size: 1 mg

Product Details

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

Chemical Properties

Appearance	Solid
Molecular Weight	843.04
Soluble In	DMSO
Chemical Structure	



[CAG = Click-Assisting Group]

Spectral Properties

Excitation Wavelength	N/A
Emission Wavelength	N/A

Applications

FastClick™ 6-ROX Alkyne contains both the moiety of FastClick (for assisting click efficiency) and 6-ROX fluorophore (as the fluorescence tag) for developing 6-ROX-based fluorescent probes. It readily reacts with an azido-modified biomolecule under extremely mild conditions. 6-ROX is one of the most common red fluorophores used for labeling biomolecules, in particular, for labeling oligonucleotides. 6-ROX conjugates are widely used in fluorescence-based nucleic acid detections such as PCR and FISH etc. 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. 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.