

## FastClick™ Cy5 Alkyne

Catalog Number: 72852

Unit Size: 1 mg

### Product Details

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

### Chemical Properties

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Appearance	Solid
Molecular Weight	965.24
Soluble In	DMSO

### Spectral Properties

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Excitation Wavelength	651 nm
Emission Wavelength	670 nm

### Applications

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FastClick™ Cy5 Alkyne contains both the moiety of FastClick (for assisting click efficiency) and Cy5 fluorophore (as the fluorescence tag) for developing Cy5-based fluorescent probes. It readily reacts with an azido-modified biomolecule under extremely mild conditions. Cy5 is a common deep red fluorophore in combination with Cy3 (orange-red fluorescence) for dual color detections. Cy5 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 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.