

## 5-ROX BCN

Catalog Number: 70510

Unit Size: 1 mg

### Product Details

---

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	12 months upon receiving

### Chemical Properties

---

Appearance	Solid
Molecular Weight	N/A
Soluble In	DMSO

### Spectral Properties

---

Excitation Wavelength	578 nm
Emission Wavelength	604 nm

### Applications

---

5-ROX BCN is a clickable derivative of 5-carboxy-X-rhodamine (5-ROX), commonly used for labeling biomolecules such as peptides. 5-ROX is a well-characterized orange-red fluorescent dye known for its high brightness and photostability. To minimize steric hindrance and reduce potential interference with biomolecular interactions after conjugation, the molecule incorporates a polyethylene glycol (PEG) spacer. The bicyclononyne (BCN) moiety enables strain-promoted azide-alkyne cycloaddition (SPAAC) with azido groups, forming stable triazole linkages under catalyst-free conditions. In addition, unlike dibenzocyclooctyne (DBCO), BCN also reacts efficiently with tetrazines through an inverse electron-demand Diels-Alder (IEDDA) reaction. This reaction is rapid, selective, and bioorthogonal, allowing labeling of biomolecules under physiological conditions without the need for metal catalysts or disruption of native biological processes.