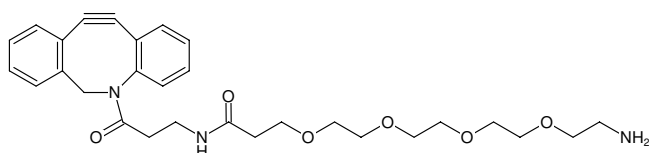


**DBCO-PEG₄-Amine**Dibenzylcyclooctyne-PEG₄-Amine

Cat. No.	Amount
CLK-A103P-25	25 mg
CLK-A103P-100	4 x 25 mg
CLK-A103P-500	500 mg

Structural formula of DBCO-PEG₄-Amine**For research use only!****Shipping:** shipped on dry ice**Storage Conditions:** store at -20 °C**Additional Storage Conditions:** store undissolved, for use prepare a fresh solution**Shelf Life:** 12 months after date of delivery (undissolved)**Molecular Formula:** C₂₉H₃₇N₃O₆**Molecular Weight:** 523.63 g/mol**Exact Mass:** 523.27 g/mol**CAS#:** 1255942-08-5**Purity:** ≥ 90 % (HPLC)**Form:** oil**Color:** slightly yellow to slightly brown**Solubility:** DCM, DMF, DMSO, THF**Applications:**

Protein-peptide conjugates

Peptide-small molecule conjugates

¹⁸F radiolabelling

Protein-oligonucleotide conjugates

Surface modification

Description:

Unique carbonyl/carboxyl reactive dibenzylcyclooctyne, which reacts with acids, active esters and aldehydes. The very hydrophilic PEG₄ spacer enhances solubility in water as well as in commonly used organic solvents of moderate polarity. Furthermore, the very water soluble, hydrophilic spacer reduces non-specific binding. Due to its length, the 24 Å (20 atoms) long spacer gives ready accessibility to the dibenzylcyclooctyne for the azide binding.

Important Product Information

Do not use DTT, TCEP or β-mercaptoethanol, because they will reduce the azide.

Copper-free Click Reaction

- Prepare the azide-containing sample in reaction buffer.
- Add DBCO-protein conjugate to azide-containing sample.
- Recommendation: Add 1 mol equivalent of limiting protein to 1.5 - 3.0 mol equivalents of highest abundance protein.
- Incubate the reaction at room temperature for 2 - 4 hours or at 4 °C for 2 - 12 hours.
- The reaction is now ready for purification.

Troubleshooting**Problem:** Low conjugation of DBCO and azide

- Possible reason: Suboptimal reaction conditions
 - Increase incubation time
 - Optimize conjugation conditions by altering molar excess
 - Perform conjugation reactions at 37 °C

Selected References:

Simon *et al.* (2012) Facile Double-Functionalization of Designed Ankyrin Repeat Proteins using Click and Thiol Chemistries. *Bioconjugate Chem.* **23 (2)**:279.

Zeng *et al.* (2012). ⁶⁴Cu Core-Labeled Nanoparticles with High Specific Activity via Metal-Free Click Chemistry. *ACS Nano.* **6 (6)**:5209.

Arumugam *et al.* (2011). [¹⁸F]Azadibenzocyclooctyne ([¹⁸F]ADIBO): A biocompatible radioactive labeling synthon for peptides using catalyst free

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[3+2] cycloaddition. *Bioorg. Med. Chem. Lett.* **21**:6987.

Campbell-Verduyn *et al.* (2011). Strain-Promoted Copper-Free Click Chemistry for ¹⁸F Radiolabeling of Bombesin. *Angew. Chem. Int. Ed.* **50**:11117.

Debets *et al.* (2010) Aza-dibenzocyclooctynes for fast and efficient enzyme PEGylation via copper-free (3+2) cycloaddition. *Chem. Commun.* **46**:97.