BostonBiochem®

An R&D Systems Company

MATERIAL DATA SHEET

Recombinant Di−Ubiquitin/Ub2 (K6)
Cat. # UC-11

With a predicted molecular weight of 17 kDa, Di-Ubiquitin is composed of two Ubiquitin monomers that are covalently linked through an isopeptide bond, which typically form between a lysine residue of one Ubiquitin molecule and the C-terminal glycine residue of another Ubiquitin molecule (1). Each human Ubiquitin monomer is 76 amino acids (aa) in length and shares 96% and 100% aa identity with yeast and mouse Ubiquitin, respectively (2). Ubiquitin has seven lysine residues that can participate in the formation of poly-Ubiquitin chains. The specific lysine residue used in Ubiquitin conjugation is thought to determine the function of poly-ubiquitination in cellular processes such as protein degradation, signaling, and trafficking (3-8).

Linkage specific di-Ubiquitin is a substrate for enzymes that cleave the isopeptide linkage between two Ubiquitin molecules. It can also be used to investigate the mechanism of binding and recognition by Ubiquitin-activating (E1) or Ubiquitin-conjugating (E2) enzymes, deubiquitinating enzymes, Ubiquitin ligases (E3), or other proteins that contain Ubiquitin-associated domains (UBAs) or Ubiquitin-interacting motifs (UIMs).

Product Information	
Quantity:	25 µg
MW:	17 kDa
Source:	Chemically Synthesized Accession # P0CG47
Stock:	Lyophilized from a solution in deionized water.
Solubility:	Reconstitute at 2 mg/mL in an aqueous solution.
Purity:	>90%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

Use & Storage

Use: Ubiquitin chains vary in length, linkage, and function. K6-linked Di-Ubiquitin Chains (Ub2) are ideal for investigating Ubiquitin-binding proteins and as substrates for Ubiquitin-specific isopeptidases. Reaction conditions will need to be optimized for each specific application. IMPORTANT: Heating this product in SDS-PAGE buffer or terminating reactions containing this product with heated SDS-PAGE buffer could lead to unexpected, high apparent molecular weight banding or smearing on gels that is not representative of product purity. For optimal results, we recommend incubation in SDS-PAGE buffer + DTT at <40 °C for 20 minutes prior to gel electrophoresis.

Storage: **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

Literature

References:

1. Scheffner, M. *et al*. (1995) Nature **373**:81.
2. Sharp, P.M. & W.-H. Li (1987) Trends Ecol. Evol. **2**:328.
3. Behrends, C. & J.W. Harper (2011) Nat. Struct. Mol. Biol. **18**:520.
4. Greene, W. *et al*. (2012) PLoS Pathog. **8**:e1002703.
5. Henry, A.G. *et al*. (2012) Dev. Cell **23**:519.
6. Tong, X. *et al*. (2012) J. Biol. Chem. **287**:25280.
7. Wei, W. *et al*. (2004) Nature **428**:194.
8. Zhang, J. *et al*. (2012) J. Biol. Chem. **287**:28646.
9. Buchberger A., *et al*. (2002) Trends. Cell. Biol. **12**:216-221.
10. Cook W.J., *et al.* (1992) J. Biol. Chem. **267**:16467-16471.
11. El Oualid, F., *et al.* (2010) Angewandte Chemie. **49**: 10149-10153.
12. Fischer R.D., *et al.* (2003) J. Biol. Chem. **278**:28976-28984.
13. Tenno T., *et al.* (2004) Genes to Cells. **9**:865-875.
14. Varadan R., *et al.* (2002) J. Mol. Biol. **324**:637-647.
15. Varadan R., *et al.* (2004) J. Biol. Chem. **279**:7055-7063.

For research use only. Not for use in humans.