
MATERIAL DATA SHEET

Recombinant Human Poly-Ubiquitin Wild-type Chains (3-7) (K63)**Cat. # UC-320**

Poly-Ubiquitin chains are composed of Ubiquitin monomers that are covalently linked through isopeptide bonds, 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). Seven of the 76 aa in Ubiquitin are lysine residues that can participate in poly-Ubiquitin chain formation. Linkage through specific lysine residues is thought to serve as a signal that affects protein degradation, signaling, trafficking, and other cellular processes (3-8).

Linkage specific poly-Ubiquitin chains are used to investigate mechanisms of chain recognition, binding and hydrolysis by the proteasome, deubiquitinating enzymes, E3 ligases or other proteins that contain ubiquitin-associated domains (UBAs) or ubiquitin-interacting motifs (UIMs). Lys63-linked poly-Ubiquitin has been implicated in several non-degradative processes such as receptor endocytosis and sorting, translation, DNA damage repair, the stress response and signaling in the NFκB pathway. This product is formed with wild-type ubiquitin and linkage-specific enzymes. This mixture of poly-Ubiquitin chains contains tri-Ubiquitin and higher MW species, mono- and di-Ubiquitin have been removed.

Product Information

Quantity:	100 µg
MW:	26 kDa (Ub3), 34 kDa (Ub4), 43 kDa (Ub5), 52 kDa (Ub6), and 60 kDa (Ub7)
Source:	<i>E. coli</i> -derived Accession # P0CG47
Stock:	Lyophilized from a solution in deionized water.
Solubility:	Reconstitute at 2 mg/mL in an aqueous solution.
Purity:	>95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

Use & Storage

Use: Ubiquitin chains vary in length, linkage, and function. K63-linked Poly-Ubiquitin Chains (Ub3-7) 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.
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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.
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8. Zhang, J. *et al.* (2012) *J. Biol. Chem.* **287**:28646.

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