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**MATERIAL DATA SHEET**

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**Recombinant Human Tri-Ubiquitin/Ub3 Wild-type Chains (K48)****Cat. # UC-215**

With a predicted molecular weight of 26 kDa, tri-Ubiquitin chains are composed of three 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 (1). Each human Ubiquitin monomer is 76 amino acids (aa) in length and shares 96% and 100% aa sequence 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 tri-Ubiquitin can be used as a substrate for enzymes that cleave the isopeptide linkage between Ubiquitin molecules. It can also be used to investigate mechanism of binding and recognition by E1 or E2 enzymes, deubiquitinating enzymes, E3 ligases or other proteins that contain Ubiquitin-associated domains (UBAs) or Ubiquitin-interacting motifs (UIMs). This product is formed with wild-type human recombinant Ubiquitin and linkage-specific enzymes.

**Product Information**

<b>Quantity:</b>	100 µg
<b>MW:</b>	26 kDa
<b>Source:</b>	<i>E. coli</i> -derived Accession # P0CG47
<b>Stock:</b>	lyophilized from a solution in sterile, deionized water.
<b>Purity:</b>	>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. K48-linked Tri-Ubiquitin Chains (Ub3) 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.

***For research use only. Not for use in humans.***