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MATERIAL DATA SHEET

Recombinant Human Linear Tetra-Ubiquitin/Ub4
Cat. # UC-710

With a predicted molecular weight of 34 kDa, Tetra-Ubiquitin chains are composed of four 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).

This linear Ubiquitin fusion protein can be used as a substrate for deubiquitinating enzymes (DUBs) to test for non-isopeptide bond cleavage activity or preference. Ub is not expressed directly as free Ub but rather as linear fusions either to itself or to certain ribosomal protein subunits. These Ub-fusion precursors are proteolyzed by deubiquitinating enzymes (DUBs) at the appropriate junction points to yield active Ub monomers with C-termini ending in GG. There are likely several intracellular DUBs which perform this essential processing role. This protein can also be used to investigate the mechanism of binding and recognition by E1 or E2 enzymes, DUBs, E3 ligases or other proteins that contain Ubiquitin-associated domains (UBAs) or Ubiquitin-interacting motifs (UIMs).

Product Information	
Quantity:	100 µg
MW:	34 kDa
Source:	*E. coli*-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. Linear Tetra-Ubiquitin Chains 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.
7. Wei, W. *et al*. (2004) Nature **428**:194.
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