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MATERIAL DATA SHEET

Recombinant Human Tri-Ubiquitin Ub3 K11/K48 branched
Cat. # UC-1148

Linkage-specific polyubiquitin chains may be used as a substrate for in vitro reactions with deubiquitinating enzymes ("DUB's") that cleave the peptide of isopeptide linkage between adjacent ubiquitin molecules. Polyubiquitin chains can also be used to investigate mechanisms of binding and recognition between the chains and other proteins that contain Ubiquitin-Associated domains (UBA's), Ubiquitin-Interacting Motifs (UIM's), ZnF's, and/or other ubiquitin-sensing elements.

K11/K48-branched polyubiquitin chains facilitate rapid substrate delivery to the proteasome, which prevents accumulation of aggregation-prone nascent proteins. Furthermore, enzymes and effectors of K11/K48-linked chains are encoded by essential genes that are often mutated in neurodegenerative diseases, providing proof that heterotypic ubiquitin chains play important roles in cellular signaling pathways.

The correctness of linkage and purity of each production lot of this product is assessed using the Absolute Quantitation of Ubiquitin Method (Ub-AQUA), an LCMS-based technique that provides extremely accurate information of the composition of polyubiquitin samples. The product is also tested in a Western Blot application described by Yau *et al*.

Product Information	
Quantity:	25 µg
MW:	26 kDa
Source:	*E. coli*-derived human Tri-Ubiquitin protein Accession # P0CG47
Stock:	0.5 mg/ml (20 µM) in 10 mM HEPES pH 7.5
Purity:	>90%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain. **Ub-AQUA** analysis: K11 + K48: 99% All other linkages ≤ 0.5%

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Use & Storage

Use: Ubiquitin chains vary in length, linkage and function. K11/K48-linked, "branched" Tri-ubiquitin chains are ideal as a Western Blot control as described in Yau *et al.* in "Assembly and Function of Heterotypic Ubiquitin Chains in Cell-Cycle and Protein Quality Control."

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

- 24 months from date of receipt, -70 °C as supplied.
- 12 months, -20 °C under sterile conditions after opening.

Literature

References:

1. Yau, R.G. *et al.* (2017) Cell: doi.org/10.1016/j.cell.2017.09.040

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