# Biotinylated M1 (linear) Tetra-Ubiquitin

Cat. # SI0104B

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## Background

Ubiquitin chains are essential components in the study of protein degradation pathways, protein trafficking, and cellular signaling processes. These polymeric chains of ubiquitin molecules play critical roles in regulating protein stability, localization, and activity. M1-linked ubiquitination is traditionally associated with the regulation of NFκB and IFN signaling. Recombinant tetraubiquitin is expressed as a linear chain, with amide linkages joining the N- and C-termini of each ubiquitin molecule. This molecule is HIS-tagged at the N-terminus of the most distal ubiquitin. M1 Tetra-Ubiquitin is a tetrameric chain of wild-type ubiquitin. It is expressed as a linear chain, with monomers linked through N-terminal methionines and C-terminal glycines. This is achieved through intracellular expression and purification. The linear tetraubiquitin is then biotinylated on an available cysteine, allowing for the attachment of a single biotin molecule.

## Application

- Biotinylated chains are used to label proteins so they can be selectively separated via a multitude of methods such as Western blotting, pull-downs (see website), ELISAs, etc.
- Streptavidin or avidin can be used to specifically visualize the labeled protein.
- Investigation of ubiquitin chain specificity and selectivity
- Studies on the role of ubiquitin chains in protein degradation pathways (e.g., proteasomal and autophagic degradation)
- Analysis of ubiquitin-mediated signaling pathways and cellular responses
- Structural studies to elucidate the architecture and dynamics of ubiquitin chains
- Screening assays to identify modulators of ubiquitin chain assembly and disassembly processes

## Product Specifications

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|---|---|
| **Tag** | Biotin |
| **Purity** | ≥ 95% by HPLC-MS |
| **Molecular Weight** | 35,146.5 Da |
| **Quantity** | 25 µg |
| **Species** | Human |
| **Expression System** | *E. Coli* |
| **Physical State** | Liquid |
| **Buffer** | 50 mM Tris, pH 7.5, 0.15 M NaCl |
| **Stability & Storage** | Over 1-year at -80° C. Avoid repeated freeze/thaw cycles |

## References


1. Khan, M.; Syed, G.H.; Kim, S-J.; Siddiqui, A. Hepatitis B Virus-Induced Parkin-dependent Recruitment of Linear Ubiquitin Assembly Complex (LUBAC) to Mitochondria and Attenuation of Innate Immunity. PLoS Pathog. 2016, 12, e1005693.
2. Swatek, K.N. & Komander, D. Ubiquitin Modifications. Cell Res. 2016, 26, 399-422.
3. Yau, R. & Rape, M. The increasing complexity of the ubiquitin code. Nature Cell. Bio. 2016, 18, 579-586



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