

## Biotinylated M1 (linear) Tetra-Ubiquitin

Cat. # SI0104B

### 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 regulation of NFκB and IFN signalling. Recombinant tetraubiquitin expressed as a linear chain. Amide linkages join the N- and C-terminus of each ubiquitin molecule to each other. 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 wherein monomers are linked through N-terminal methionines and C-terminal glycines. This is done via expression and purification (made within the cell). This linear tetra ubiquitin is then biotinylated on an available cysteine to allow for one biotin molecule to be attached.

### Application:

- Biotinylated chains are meant to label the protein so they can be selectively separated via a multitude of methods such as Western Blotting, pull downs (see website), ELISAs, etc.
- Can use streptavidin or avidin to visualize this protein specifically.
- 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 Information

<b>Purity:</b>	> 95% by HPLC-MS
<b>Molecular Weight:</b>	35,146.5 Da
<b>Physical State:</b>	Liquid, 50 mM Tris, pH 7.5, 0.15 M NaCl
<b>Quantity:</b>	25 µg
<b>Solubility:</b>	>1 mg/mL
<b>Storage:</b>	-80o 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.

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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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