

## M1 (linear) Di-Ubiquitin (Phosphorylated)

Cat. # SI0102P

### 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 NF $\kappa$ B and IFN signalling. Phospho-ubiquitin chains represent a specialized class of polyubiquitin characterized by phosphorylation at Serine 65 and play a central role in mitophagy signaling pathways.

M1 Di-Ubiquitin (phosphorylated) is a dimeric chain of wild-type ubiquitin. It is expressed as a linear chain wherein monomers are linked through N-terminal methionines and C-terminal glycines. The chains are then enzymatically phosphorylated at the Ser65 position.

### Application:

- Investigation of phosphoubiquitin chain specificity and selectivity
- Studies on the role of phosphoubiquitin chains in protein degradation pathways (e.g., proteasomal and autophagic degradation)
- Analysis of phosphoubiquitin-mediated signaling pathways and cellular responses
- Structural studies to elucidate the architecture and dynamics of phosphoubiquitin chains
- Screening assays to identify modulators of phosphoubiquitin chain assembly and disassembly processes

### Product Information

<b>Purity:</b>	≥ 95% by HPLC-MS
<b>Molecular Weight:</b>	17866-17946 Da
<b>Physical State:</b>	Liquid, 50 mM Tris, pH 7.5, 0.15 M NaCl
<b>Quantity:</b>	100 $\mu$ g
<b>Solubility:</b>	>1 mg/mL
<b>Storage:</b>	-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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Data

HPLC

Deconvoluted Mass Spectrum

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