

Biotinylated K11-Linked Tetra-Ubiquitin (Phosphorylated)

Cat. # SI1104BP

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. K11-linked ubiquitination is traditionally associated with cell cycle regulation and proteasomal degradation. Phospho-ubiquitin chains represent a specialized class of polyubiquitin characterized by phosphorylation at Serine 65 and play a central role in mitophagy signaling pathways.

K11 Tetra-Ubiquitin (phosphorylated) is a tetrameric chain of wild-type ubiquitin, wherein ubiquitin monomers are enzymatically linked together via an isopeptide bond between Lysine 11 and the C-terminal Glycine. The chains are then enzymatically phosphorylated at the Ser65 position. These tetra ubiquitin are then additionally biotinylated on an available cysteine that was mutated in one of the ubiquitins 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 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

Purity:	≥ 95% by HPLC-MS
Molecular Weight:	34842-35466 Da (Depends on degree of Phosphorylation)
Physical State:	Liquid, 50 mM Tris, pH 7.5, 0.15 M NaCl
Quantity:	25 µg
Solubility:	>1 mg/mL
Storage:	-80° C. Avoid repeated freeze/thaw cycles

References

1. Wickliffe, K.E.; Williamson, A.; Meyer, H-J.; Kelly, A.; Rape, M. K11-linked Ubiquitin Chains as Novel Regulators of Cell Division. *Trends Cell Biol.* **2011**, *21*, 656-663.
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. *Nat. Cell. Bio.* **2016**, *18*, 579-586.

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Data

HPLC

Deconvoluted Mass Spectrum

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