K6 Tetra-Ubiquitin (Ub4) S20C Mutant

Cat. # SI0624

Background:

Mitophagy (the autophagic processing of damaged mitochondria) via Parkin activation is mainly promoted by K6 and K63 linked chains. K6-linked ubiquitination is also a main contributor to the DNA damage response and acts as a DNA-binding enhancer during the innate immune system response. These chain types are also involved in protein stabilization and other non-degradative processes. The serine in position 20 has been changed to a cysteine.

These tetra-ubiquitin chains are generated from the enzymatic linkage of wild-type ubiquitin through lysine 6.

Application:

- To investigate enzymes that cleave this specific peptide linkage between two ubiquitin molecules.
- To better understand the mechanisms of ubiquitin-activating (E1) or ubiquitin-conjugating (E2) enzymes, ubiquitin-associated domains (UBA), or ubiquitin-interacting motifs (UIMs) among others.
- To use as a label through biotinylation or fluorescence.

Product Information

Purity:	≥ 70% by SDS-PAGE and Mass Spectrometry
Molecular Weight:	34267 Da
Physical State:	liquid
Quantity:	25, 50 µg
Solubility:	>30 mg/mL
Storage:	-80° C. Avoid repeated freeze/thaw cycles

References

1. Michel, M. A., Swatek, K. N., Hospenthal, M. K., & Komander, D. (2017). Ubiquitin linkage-specific affimers reveal insights into K6-linked ubiquitin signaling. *Molecular cell*, *68*(1), 233-246.
2. Tai, H. C., & Schuman, E. M. (2008). Ubiquitin, the proteasome and protein degradation in neuronal function and dysfunction. *Nature Reviews Neuroscience, 9(11)*, 826-838.
3. Van Huizen, M., & Kikkert, M. (2020). The role of atypical ubiquitin chains in the regulation of the antiviral innate immune response. *Frontiers in cell and developmental biology*, *7*, 392.

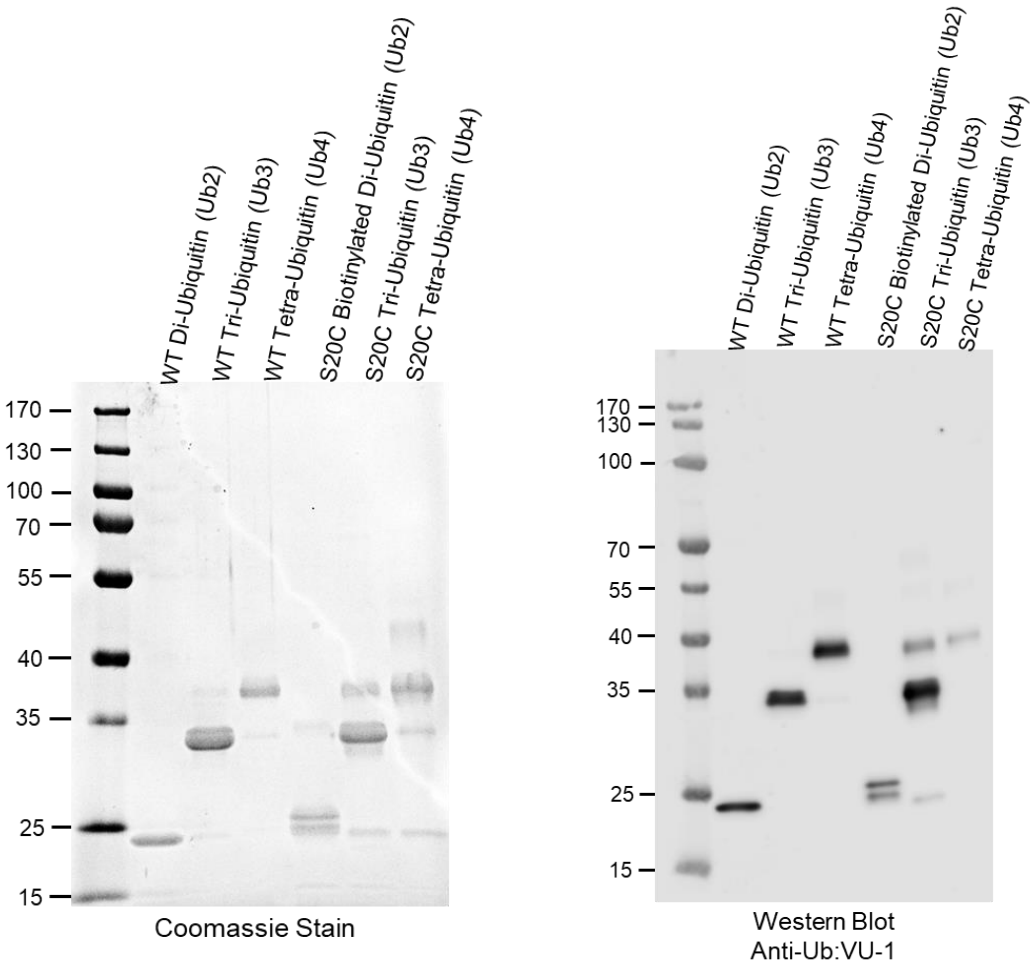
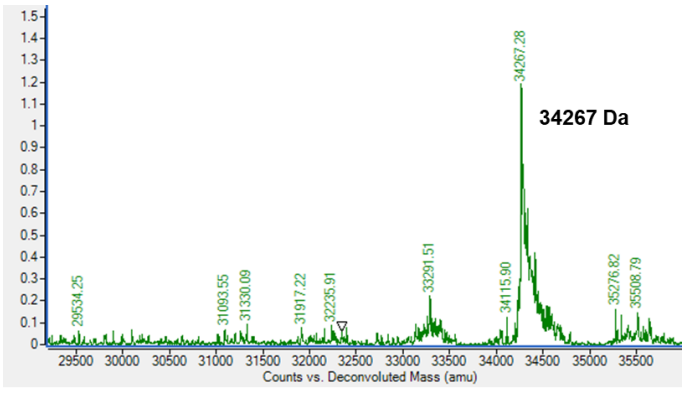


Figure 1. Image on the left shows 1 µg of each sample (labeled on top) run through SDS-PAGE and with a Coomassie Stain. Image on the right shows 100 ng of each sample (with the exception of S20C tetra-ubiquitin) run through SDS-PAGE and then transferred to a nitrocellulose membrane for a Western Blot with an anti-ubiquitin VU-1 antibody.



LC/MS

Figure 2. Image shows the mass spectrometry readout, showing a mass of 34267 Da.