

Lot # XXXXX

MATERIAL DATA SHEET

Ubiquitin, N-terminal biotin, *human recombinant*

Cat. # UB-560

Ubiquitin is a 76 amino acid (aa) protein that is ubiquitously expressed in all eukaryotic organisms. Ubiquitin is highly conserved with 96% aa sequence identity shared between human and yeast ubiquitin, and 100% aa sequence identity shared between human and mouse ubiquitin. In mammals, four ubiquitin genes encode for two ubiquitin-ribosomal fusion proteins and two poly-ubiquitin proteins. Cleavage of the ubiquitin precursors by deubiquitinating enzymes gives rise to identical ubiquitin monomers each with a predicted molecular weight of 8.6 kDa. Conjugation of ubiquitin to target proteins involves the formation of an isopeptide bond between the C-terminal glycine residue of ubiquitin and a lysine residue in the target protein. This process of conjugation, referred to as ubiquitination or ubiquitylation, is a multi-step process that requires three enzymes: a Ubiquitin-Activating Enzyme (E1), a Ubiquitin-Conjugating (E2) enzyme, and a Ubiquitin ligase (E3). Ubiquitination is classically recognized as a mechanism to target proteins for degradation and as a result, ubiquitin was originally named ATP-dependent Proteolysis Factor 1 (APF-1). In addition to protein degradation, ubiquitination has been shown to mediate a variety of biological processes such as signal transduction, endocytosis, and post-endocytic sorting. Highly purified ubiquitin processed for the quantitative removal of glycine and buffer salts which can interfere with chemical and *in vitro* reactions.

Produced via a proprietary process resulting in a single Biotin modification exclusively on the N-terminus of Ubiquitin. This site-specific modification results in an Ubiquitin that is fully functional at the C-terminus, and with the full complement of reactive lysines to allow for poly-Ubiquitin chain incorporation. Use of Avidin-linked reagents allows for high efficiency capture and/or detection sensitivity. Ideal as an alternative to radio-labeled Ubiquitin

Product Information

Quantity:	50 µg
MW:	9 kDa
Stock:	X mg/ml (X µM) in 10 mM HEPES, pH 8.0
Purity:	> 95% by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie Blue stain

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Use & Storage

Use: Biotinylated Recombinant Human Ubiquitin can be conjugated to substrate proteins via the subsequent actions of a Ubiquitin-activating (E1) enzyme, a Ubiquitin-conjugating (E2) enzyme, and a Ubiquitin ligase (E3). Reaction conditions will need to be optimized for each specific application. We recommend using biotinylated Ubiquitin in conjunction with native Ubiquitin at a combined concentration of 10-50 μ M with a 1:2 to 1:20 ratio of biotinylated Ubiquitin:native Ubiquitin. The resulting poly-Ubiquitin chains can be visualized/quantitated with avidin-linked detection reagents.

Storage: Store at -20°C or -80°C. Avoid multiple freeze/thaw cycles.

Literature

References: Ciechanover, A. *et al.* (1980) Proc. Natl. Acad. Sci. USA **77**: 1365
Greene, W. *et al.* (2012) PLoS Pathog. **8**:e1002703
Hershko, A. *et al.* (1980) Proc. Natl. Acad. Sci. USA **77**: 1783
Sharp, P.M. & W.-H. Li. (1987) Trends Ecol. Evol. **2**: 328
Tong, X. *et al.* (2012) J. Biol. Chem. **287**: 25280
Wei, W. *et al.* (2004) Nature **428**: 194
Wertz, I.E. *et al.* (2004) Nature **430**: 694

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