

Lot # XXXXX

MATERIAL DATA SHEET

HA-Ubiquitin, *human recombinant*

Cat. # U-110

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. In mammals, four ubiquitin genes encode for two ubiquitin-ribosomal fusion proteins and two polyubiquitin 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 (E1) enzyme, 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.

This functional N-terminal HA-tagged ubiquitin protein allows for the convenient detection or affinity purification of ubiquitinated proteins *in vitro*. The HA peptide sequence (YPYDVPDYA) is an epitope derived from the influenza hemagglutinin protein. This tag is specifically recognized by anti-HA antibodies and anti-HA-agarose.

Product Information

Quantity:	1 mg
Stock:	2.5 mg/ml (250 µM) in 10 mM HEPES pH 7.5
MW:	9.8 kDa
Purity:	> 95% by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie Blue stain.

Use & Storage

Use:	Recombinant Human HA-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 an initial HA-Ubiquitin concentration of 5-50 µM.
Storage:	Store at -80°C. Avoid multiple freeze/thaw cycles.

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Literature

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For Laboratory Research Use Only, Not For Use in Humans

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