

MATERIAL DATA SHEET**HA-Ubiquitin Vinyl Sulfone, *human recombinant*****Cat. # U-212**

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 N-terminal HA-tagged ubiquitin is a potent, irreversible and specific inhibitor of most deubiquitinating enzymes (DUBs) including C-terminal hydrolases (UCHs) and ubiquitin-specific proteases (USPs). Useful for inhibiting the hydrolysis of polyubiquitin chains on substrate proteins *in vitro* and thus enhances polyubiquitin chain accumulation. 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:	25 µg
MW:	9.9 kDa
Stock:	2.5 mg/ml (250 µM) in 50 mM MES, pH 6.0.
Purity:	> 95% by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie Blue stain.

Use & Storage

Use:	Add Recombinant Human HA-ubiquitin Vinyl Sulfone to <i>in vitro</i> assays to inhibit deubiquitinating enzymes (DUBs). The HA-tag allows for detection and purification of DUB activity. Reaction conditions will need to be optimized for each specific application. We recommend an initial HA-ubiquitin Vinyl Sulfone concentration of 1-5 µM.
Storage:	Store stock solution at -80 °C. Avoid multiple freeze/thaw cycles.

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Literature

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