

MATERIAL DATA SHEET**Ubiquitin-Vinyl Methyl Ester (Ub-VME), *human recombinant***
Cat. # U-203

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 chemically modified 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.

| Product Information | |
|---------------------|---|
| Quantity: | 50 µg |
| MW: | 8.6 kDa |
| Stock: | 2.2 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 Ubiquitin-VME to <i>in vitro</i> assays to inhibit deubiquitinating enzymes (DUBs). Reaction conditions will need to be optimized for each specific application. We recommend an initial Ubiquitin VME concentration of 1-5 µM. |
| Storage: | Store stock solution at -80°C. Avoid multiple freeze/thaw cycles. |

Literature

- References:** Borodovsky A., *et al.* (2001) EMBO J. **20**: 5187-5196
Borodovsky A., *et al.* (2002) Chem. Biol. **9**: 1149-1159
Borodovsky A., *et al.* (2005) Chem. Biochem. **6**: 287-291
Hemelaar J., *et al.* (2004) Mol. Cell. Bio. **24**: 84-95
Misaghi S., *et al.* (2005) J. Biol. Chem. **280**: 1512-1520
Wang G., *et al.* (2003) Org. Lett. **5**: 737-740
Verma R., *et al.* (2002) Science. **298**: 611-615

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Rev: 05/27/2014

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