Recombinant Human HA Ubiquitin Vinyl Sulfone C-Terminal Derivative
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 Ubiquitin, and 100% aa sequence identity shared between human and mouse Ubiquitin (1). 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 (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) (2,3). 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 (4-7).

This N-terminal HA-tagged Ubiquitin is a potent, irreversible and specific inhibitor of most deubiquitinating enzymes (DUBs) including Ubiquitin C-terminal hydrolases (UCHs) and Ubiquitin-specific proteases (USPs). Useful for inhibiting the hydrolysis of poly-Ubiquitin chains on substrate proteins in vitro and thus enhances poly-Ubiquitin chain accumulation. The HA peptide sequence (YPYDVPDYA) is derived from the influenza Hemagglutinin protein. This epitope allows for the sensitive identification or purification of DUBs since it is specifically recognized by Anti-HA antibodies and/or Anti-HA-agarose.

<table>
<thead>
<tr>
<th>Product Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity:</td>
</tr>
<tr>
<td>MW:</td>
</tr>
<tr>
<td>Source:</td>
</tr>
<tr>
<td>Stock:</td>
</tr>
<tr>
<td>Purity:</td>
</tr>
</tbody>
</table>
## Use & Storage

**Use:**
Add Recombinant Human HA-Ubiquitin-Vinyl Sulfone to *in vitro* assays to inhibit deubiquitinating enzymes. The HA-tag allows for detection and purification of deubiquitinating enzymes activity. Reaction conditions will need to be optimized for each specific application. We recommend an initial Recombinant Human HA-Ubiquitin-Vinyl Sulfone concentration of 1-5 μM.

**Storage:**
- Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
- 12 months from date of receipt, -70 °C as supplied.
- 3 months, -70 °C under sterile conditions after opening.

## Literature

**References:**

*For research use only. Not for use in humans.*