# Recombinant Human His6 USP8

Catalog Number: E-520

## DESCRIPTION

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| **Source** | *Spodoptera frugiperda*, *Sf* 9 (baculovirus)-derived human USP8 protein<br>Met1 - Thr1118 (Pro2Gly, Val4Ala & V257Ala) with a N-terminal 6-His tag<br>Accession # P40818.1 |
| **Predicted Molecular Mass** | 131 kDa |

## SPECIFICATIONS

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| **Activity** | Recombinant Human His6-USP8 is a Ubiquitin-specific deconjugating enzyme. Reaction conditions will need to be optimized for each specific application. We recommend an initial Recombinant Human His6-USP8 concentration of 10-50 nM. |
| **Purity** | >95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain. |
| **Formulation** | Supplied as a solution in HEPES, NaCl and TCEP. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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| **Shipping** | The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 6 months from date of receipt, -70 °C as supplied.<br>• 3 months, -70 °C under sterile conditions after opening. |

## BACKGROUND

Ubiquitin Specific Peptidase 8 (USP8), also known as Ubiquitin Isopeptidase Y (UBPY), is a widely expressed deubiquitinating enzyme belonging to the peptidase C19 family. It has a predicted molecular weight of 127.5 kDa (1). Human USP8 is 1118 amino acids (aa) in length and shares 84% aa sequence identity with the mouse and rat orthologs (2). It contains an N-terminal MIT domain (aa 33-116) that mediates endosomal localization, CHMP-binding, and maintenance of ESCRT-0 (3). USP8 also has a rhodanese domain (aa 181-319) that binds NRDP1 Ubiquitin ligase (E3), a SH3 domain binding sequence (aa 405-413), and a C-terminal catalytic domain (aa 734-1110) (2,4). USP8 is a growth-regulated enzyme that controls the internalization and endocytic trafficking of cell surface receptors (1,5). Some receptors are targeted for internalization and degradation by ubiquitination. USP8 has been shown to disrupt the down-regulation of multiple receptors, including EGF R/ErbB1, ErbB2/Her2, and Smoothened, via their deubiquitination (6-9). Conversely, USP8 appears to have the opposite effect on the trafficking of CXCR4, PAR2, and the δ-opioid receptor (10-12). Depletion or catalytic inactivation of USP8 stabilized their expression (10-12). It is thought that deubiquitination of these receptors down-stream of the sorting endosome commits them to lysosomal degradation (10). USP8 can be phosphorylated at Ser680 allowing for 14-3-3-epsilon binding, which subsequently inhibits USP8 activity (13). Additionally, USP8 undergoes tyrosine phosphorylation at its N-terminus following EGF activation of the EGF R/ErbB1 / ErbB2/Her2 receptor complex (7).

**References:**


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**Global** bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
**USA** TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
**Europe | Middle East | Africa** TEL +44 (0)1235 529449