

USP2 Catalytic Domain Protein, Human (His)

Cat. No.:	HY-P79457
Synonyms:	Ubiquitin Specific Peptidase 2; UBP41; Ubiquitin-Specific-Processing Protease 2; Ubiquitin Carboxyl-Terminal Hydrolase 2; 41 KDa Ubiquitin-Specific Protease; Deubiquitinating Enzyme 2; Ubiquitin-specific Protease 2
Species:	Human
Source:	E. coli
Accession:	O75604 (N259-M605)
Gene ID:	9099
Molecular Weight:	

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.2 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	<p>The USP2 catalytic domain protein acts as a hydrolase, targeting polyubiquitinated proteins such as MDM2, MDM4, and CCND1. Isoform 1 and isoform 4 exhibit both ubiquitin-specific peptidase and isopeptidase activities. Notably, it deubiquitinates MDM2, indirectly promoting p53/TP53 degradation and limiting p53 activity without reversing MDM2-mediated ubiquitination of p53. Additionally, USP2 prevents MDM2-mediated degradation of MDM4, contributing to the intricate regulation of cellular processes. In the context of cell-cycle progression, USP2 plays a role in G1/S transition in both normal and cancer cells. Furthermore, it emerges as a regulator of the circadian clock, influencing its intrinsic rhythm and responsiveness to external cues. By associating with clock proteins, USP2 deubiquitinates the core clock component PER1, affecting its nucleocytoplasmic shuttling and nuclear retention. This multifaceted protein also participates in the regulation of myogenic differentiation of embryonic muscle cells and serves as a circadian clock output effector, influencing Ca(2+) absorption in the small intestine by likely modulating NHERF4 levels and, consequently, the activity of the Ca(2+) channel TRPV6.</p>
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Caution: Product has not been fully validated for medical applications. For research use only.

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