

## USP44 Protein, Human

Cat. No.:	HY-P701417
Synonyms:	USP44; Ubiquitin carboxyl-terminal hydrolase 44; Deubiquitinating enzyme 44; Ubiquitin thioesterase 44; Ubiquitin-specific-processing protease 44
Species:	Human
Source:	E. coli
Accession:	Q9H0E7 (M1-S712)
Gene ID:	84101
Molecular Weight:	

### PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 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 USP44 Protein, featured in this description, assumes a pivotal role as a deubiquitinase in the regulation of the spindle assembly checkpoint or mitotic checkpoint, crucial for preventing premature anaphase onset during cell division. It achieves this by specifically mediating the deubiquitination of CDC20, a negative regulator of the anaphase-promoting complex/cyclosome (APC/C). This deubiquitination event stabilizes the MAD2L1-CDC20-APC/C ternary complex, forming the mitotic checkpoint complex, ultimately preventing premature activation of the APC/C and reinforcing the spindle assembly checkpoint. USP44 extends its regulatory reach by promoting the deubiquitination of histone H2A and H2B. Additionally, it is recruited to RNF8/RNF168-ubiquitinated chromatin surrounding double-stranded breaks, where it negatively regulates protein recruitment to damaged chromatin. USP44 also participates in the nucleotide excision repair pathway by deubiquitinating DDB2, preventing its premature degradation on damaged chromatin. Furthermore, it plays a role in promoting FOXP3 stabilization through 'Lys-48'-linked deubiquitination, enhancing regulatory T-cell lineage stability, and positively contributes to the innate immune response to DNA viruses by deubiquitinating STING1 and stabilizing it. This multifaceted role underscores the importance of USP44 in orchestrating key cellular processes.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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