VCP Protein, Human (His)

Cat. No.:	HY-P71420
Synonyms:	Transitional Endoplasmic Reticulum ATPase; TER ATPase; 15S Mg(2+)-ATPase p97 Subunit; Valosin-Containing Protein; VCP
Species:	Human
Source:	E. coli
Accession:	P55072 (A2-N589)
Gene ID:	7415
Molecular Weight:	Approximately 75.0 kDa

PROPERTIES

AA Sequence	A S G A D S K G D D L S T A I L K Q K N R P N R L I V D E A I N E D N S V V S L S Q P K M D E L Q L F R G D T V L L K G K K R R E A V C I V L S D D T C S D E K I R M N R V V R N N L R V R L G D V I S I Q P C P D V K Y G K R I H V L P I D D T V E G I T G N L F E V Y L K P Y F L E A Y R P I R K G D I F L V R G G M R A V E F K V V E T D P S P Y C I V A P D T V I H C E G E P I K R E D E E E S L N E V G Y D D I G G C R K Q L A Q I K E M V E L P L R H P A L F K A I G V K P P R G I L L Y G P P G T G K T L I A R A V A N E T G A F F F L I N G P E I M S K L A G E S E S N L R K A F E E A E K N A P A I I F I D E L D A I A P K R E K T H G E V E R R I V S Q L L T L M D G L K Q R A H V I V M A A T N R P N S I D P A L R R F G R F D R E V D I G I P D A T G R L E I L Q I H T K N M K L A D D V D L E Q V A N E T H G H V G A D L A A L C S E A A L Q A I R K K M D L I D L E D E T I D A E V M N S L A V T M D D F R W A L S Q S N P S A L R E T V V E V P Q V T W E D I G G L E D V K R E L Q E L V Q Y P V E H P D K F L K F G M T P S K G V L F Y G P P G C G K T L L A K A I A N E C Q A N F I S I K G P E L L T M W F G E S E A N V R E I F D K A R Q A A P C V L F F D E L D S I A K A R G G N
Biological Activity	No Enzyme activity.
Appearance	Solution.
Formulation	Supplied as a 0.2 μm filtered solution of 50 mM Tris-HCl, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	N/A
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	VCP protein is essential for orchestrating the dynamic processes associated with Golgi stacks, playing a crucial role in their fragmentation during mitosis and subsequent reassembly post-mitosis. It actively participates in the formation of transitional endoplasmic reticulum (tER), facilitating the transfer of membranes from the endoplasmic reticulum to the Golgi apparatus through ATP-dependent vesicle budding from the tER. The VCP, UFD1, and NPLOC4 ternary complex is pivotal for binding ubiquitinated proteins and mediating the export of misfolded proteins from the endoplasmic reticulum to the cytoplasm for proteasomal degradation. Additionally, VCP is integral to various cellular processes, including the regulation of spindle disassembly, formation of a closed nuclear envelope, and modulation of E3 ubiquitin-protein ligase activity. It actively engages in endoplasmic reticulum stress-induced quality control and plays a crucial role in DNA damage response by participating in the repair of double-strand breaks and stalled replication forks. Furthermore, VCP is involved in the clearance process, mediating the extraction of stressed mitochondrial outer-membrane proteins and facilitating the maturation of ubiquitin-containing autophagosomes. Its multifaceted functions extend to negative regulation of type I interferon production, playing a role in the ubiquitin-dependent sorting of membrane proteins to lysosomes, and indirectly regulating the insulin-like growth factor receptor signaling pathway by controlling the steady-state expression of the IGF1R receptor.

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