

Valosin Containing Protein (VCP) Active Protein | VCP active protein

Active Valosin Containing Protein (VCP)

CATALOG # AAA161891	HOST E Coli	APPLICATIONS Activity Assay, Cell Culture
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PRODUCT SYNONYMS

Valosin Containing Protein (VCP); Active Valosin Containing Protein (VCP); Valosin Containing Protein; IBMPFD; p97; TERA; Transitional Endoplasmic Reticulum ATPase; 15S Mg(2+)-ATPase p97 subunit4; VCP active protein

PRODUCT SPECIFICATIONS

Host	E Coli
Purity/Purification	Greater than 95% by SDS-PAGE
Form/Format	Freeze-dried powder; PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
Sequence	Gly125-Ile 371
Applicable Applications for VCP active protein	Activity Assay, Cell Culture
Species	Human
Expression System	Prokaryotic expression
Tag	N-terminal His Tag
Endotoxin Level	<1.0EU per 1ug (determined by the LAL method)
Isoelectric Point	5.9
Research Area	Neuro science
Preparation and Storage	Store at 2-8 degree C for one month, -80 degree C for 12 months

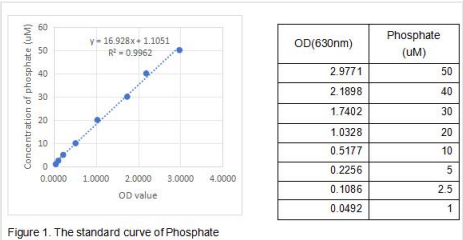
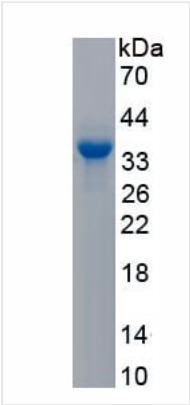


Figure 1. The standard curve of Phosphate



SDS-PAGE
Figure. SDS-PAGE

Bioactivity

VCP is an ATPase Associated with diverse cellular Activities (AAA) that has a key role in maintaining cellular homeostasis. VCP is ubiquitously expressed in tissues. At cellular level, VCP functions in many cellular compartments; VCP localizes mainly in the cytoplasm, while a smaller fraction binds to organelles or localizes in the nucleus, where it is implicated in different pathways. VCP assembles and acts as a homo-hexamer, in which each monomer is structured in an N-terminal domain that interacts with adaptors and co-factors; in two ATPase domains, D1 and D2, that by hydrolyzing ATP concur, respectively, in the hexamer formation and in supporting VCP activity; and in a C-terminal domain that binds to a small subset of co-factors and adaptors cooperating with D2 activity. The main role of VCP is to recognize and to extract ubiquitinated proteins from membranes, protein complexes, protein aggregates, or chromatin, modulating their ubiquitination or de-ubiquitination, and to enhance their degradation through the UPS or the autophagic pathway. The activity of recombinant human VCP was measured by its ability to hydrolyze the substrate ATP to phosphate which was detected by the malachite green phosphate detection Kit (Beyotime # S0196M). The reaction was performed in the assay buffer 20 mM HEPES, 13 mM NaCl and 1% glycerol, pH 8.5, initiated by addition 27 uL of various concentrations of VCP (diluted by assay buffer) to 3 uL of 100 mM ATP and 100 mM MgCl2 mixture. The final well serves as a negative control with no VCP, replaced with 27 uL assay buffer. Incubated at 37 degree C for 5min, then stop the reaction by quickly freezing samples in the dry ice and ethanol. 4 ul samples was added to 196 ul assay buffer after thawing at room temperature followed by adding 70 ul phosphate detection agent and incubated at room temperature for 30min, then read at a wavelength of 630 nm. The specific activity of recombinant human VCP is >1000 pmol/min/ug.

ADDITIONAL INFORMATION

Product Categories/Family for VCP active protein	Active proteins
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NCBI AND UNIPROT INFORMATION

NCBI GI #	6005942
NCBI GeneID	7415
NCBI Accession #	NP_009057.1
NCBI GenBank Nucleotide #	NM_007126.3
UniProt Accession #	P55072; Q0V924; Q2TAI5; Q969G7; Q9UCD5; B2R5T8
Molecular Weight	89,322 Da
NCBI Official Full Name	transitional endoplasmic reticulum ATPase
NCBI Official Synonym Full Names	valosin containing protein
NCBI Official Symbol	VCP
NCBI Official Synonym Symbols	p97; TERA; ALS14; IBMPFD
NCBI Protein Information	transitional endoplasmic reticulum ATPase; TER ATPase; yeast Cdc48p homolog; valosin-containing protein; 15S Mg(2+)-ATPase p97 subunit
UniProt Protein Name	Transitional endoplasmic reticulum ATPase
UniProt Gene Name	VCP

UniProt Synonym Gene Names	TER ATPase; VCP
UniProt Entry Name	TERA_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/e-coli-active-protein/valosin-containing-protein-vcp/161891>