

Anti-VCP Antibody
Catalog # ABO11447**Specification**

Anti-VCP Antibody - Product Information

Application	WB, IHC-P, IHC-F, ICC
Primary Accession	P55072
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Transitional endoplasmic reticulum ATPase(VCP) detection. Tested with WB, IHC-P, IHC-F, ICC in Human;Mouse;Rat.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-VCP Antibody - Additional Information

Gene ID 7415

Other Names

Transitional endoplasmic reticulum ATPase, TER ATPase, 3.6.4.6, 15S Mg(2+)-ATPase p97 subunit, Valosin-containing protein, VCP, VCP

Calculated MW

89322 MW KDa

Application Details

Immunocytochemistry , 0.5-1 µg/ml, Human, Mouse, Rat
Immunohistochemistry(Frozen Section), 0.5-1 µg/ml, Rat, Human, Mouse
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat
Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse

Subcellular Localization

Cytoplasm, cytosol. Endoplasmic reticulum. Nucleus. Present in the neuronal hyaline inclusion bodies specifically found in motor neurons from amyotrophic lateral sclerosis patients. Present in the Lewy bodies specifically found in neurons from Parkinson disease patients. Recruited to the cytoplasmic surface of the endoplasmic reticulum via interaction with AMFR/gp78. Following DNA double-strand breaks, recruited to the sites of damage. Recruited to stalled replication forks via interaction with SPRTN.

Protein Name

Transitional endoplasmic reticulum ATPase

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Thimerosal, 0.05mg NaN₃.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human VCP(749-766aa DNDIRKYEMFAQTLQQR), identical to the related rat and mouse sequences.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.

Sequence Similarities

Belongs to the AAA ATPase family.

Anti-VCP Antibody - Protein Information**Name** VCP**Function**

Necessary for the fragmentation of Golgi stacks during mitosis and for their reassembly after mitosis. Involved in the formation of the transitional endoplasmic reticulum (tER). The transfer of membranes from the endoplasmic reticulum to the Golgi apparatus occurs via 50-70 nm transition vesicles which derive from part-rough, part-smooth transitional elements of the endoplasmic reticulum (tER). Vesicle budding from the tER is an ATP-dependent process. The ternary complex containing UFD1, VCP and NPLOC4 binds ubiquitinated proteins and is necessary for the export of misfolded proteins from the ER to the cytoplasm, where they are degraded by the proteasome. The NPLOC4-UFD1-VCP complex regulates spindle disassembly at the end of mitosis and is necessary for the formation of a closed nuclear envelope. Regulates E3 ubiquitin-protein ligase activity of RNF19A. Component of the VCP/p97-AMFR/gp78 complex that participates in the final step of the sterol-mediated ubiquitination and endoplasmic reticulum-associated degradation (ERAD) of HMGCR. Mediates the endoplasmic reticulum-associated degradation of CHRNA3 in cortical neurons as part of the STUB1-VCP-UBXN2A complex (PubMed: [26265139](http://www.uniprot.org/citations/26265139)). Involved in endoplasmic reticulum stress-induced pre-emptive quality control, a mechanism that selectively attenuates the translocation of newly synthesized proteins into the endoplasmic reticulum and reroutes them to the cytosol for proteasomal degradation (PubMed: [26565908](http://www.uniprot.org/citations/26565908)). Involved in clearance process by mediating G3BP1 extraction from stress granules (PubMed: [29804830](http://www.uniprot.org/citations/29804830), PubMed: [34739333](http://www.uniprot.org/citations/34739333)). Also involved in DNA damage response: recruited to double-strand breaks (DSBs) sites in a RNF8- and RNF168-dependent manner and promotes the recruitment of TP53BP1 at DNA damage sites (PubMed: [22020440](http://www.uniprot.org/citations/22020440), PubMed: [22120668](http://www.uniprot.org/citations/22120668)). Recruited to stalled replication forks by SPRTN: may act by mediating extraction of DNA polymerase eta (POLH) to prevent excessive translesion DNA synthesis and limit the incidence of mutations induced by DNA damage (PubMed: [23042605](http://www.uniprot.org/citations/23042605), PubMed: [23042607](http://www.uniprot.org/citations/23042607)). Together with SPRTN metalloprotease, involved in the repair of covalent DNA-protein cross-links (DPCs) during DNA synthesis (PubMed: [32152270](http://www.uniprot.org/citations/32152270)). Involved in

interstrand cross-link repair in response to replication stress by mediating unloading of the ubiquitinated CMG helicase complex (By similarity). Mediates extraction of PARP1 trapped to chromatin: recognizes and binds ubiquitinated PARP1 and promotes its removal (PubMed:35013556). Required for cytoplasmic retrotranslocation of stressed/damaged mitochondrial outer-membrane proteins and their subsequent proteasomal degradation (PubMed:16186510, PubMed:21118995). Essential for the maturation of ubiquitin-containing autophagosomes and the clearance of ubiquitinated protein by autophagy (PubMed:20104022, PubMed:27753622). Acts as a negative regulator of type I interferon production by interacting with RIGI: interaction takes place when RIGI is ubiquitinated via 'Lys-63'-linked ubiquitin on its CARD domains, leading to recruit RNF125 and promote ubiquitination and degradation of RIGI (PubMed:26471729). May play a role in the ubiquitin-dependent sorting of membrane proteins to lysosomes where they undergo degradation (PubMed:21822278). May more particularly play a role in caveolins sorting in cells (PubMed:21822278, PubMed:23335559). By controlling the steady-state expression of the IGF1R receptor, indirectly regulates the insulin-like growth factor receptor signaling pathway (PubMed:26692333).

Cellular Location

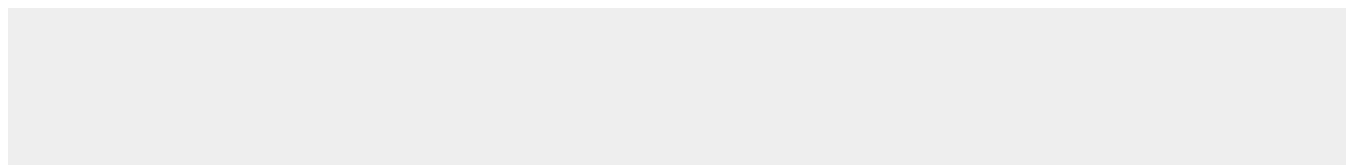
Cytoplasm, cytosol. Endoplasmic reticulum. Nucleus. Cytoplasm, Stress granule. Note=Present in the neuronal hyaline inclusion bodies specifically found in motor neurons from amyotrophic lateral sclerosis patients (PubMed:15456787). Present in the Lewy bodies specifically found in neurons from Parkinson disease patients (PubMed:15456787). Recruited to the cytoplasmic surface of the endoplasmic reticulum via interaction with AMFR/gp78 (PubMed:16168377) Following DNA double-strand breaks, recruited to the sites of damage (PubMed:22120668). Recruited to stalled replication forks via interaction with SPRTN (PubMed:23042605). Recruited to damaged lysosomes decorated with K48-linked ubiquitin chains (PubMed:27753622) Colocalizes with TIA1, ZFAND1 and G3BP1 in cytoplasmic stress granules (SGs) in response to arsenite-induced stress treatment (PubMed:29804830).

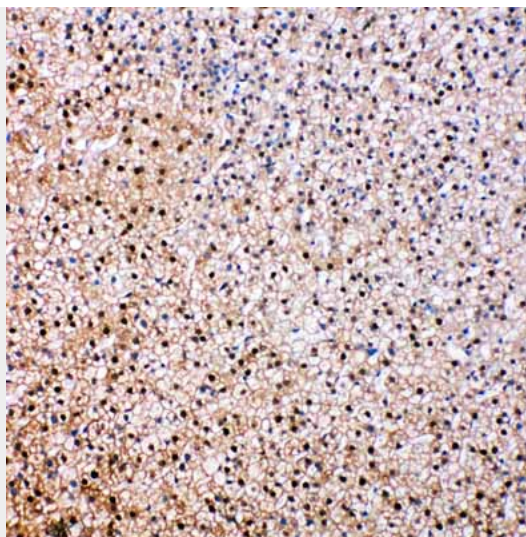
Anti-VCP Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

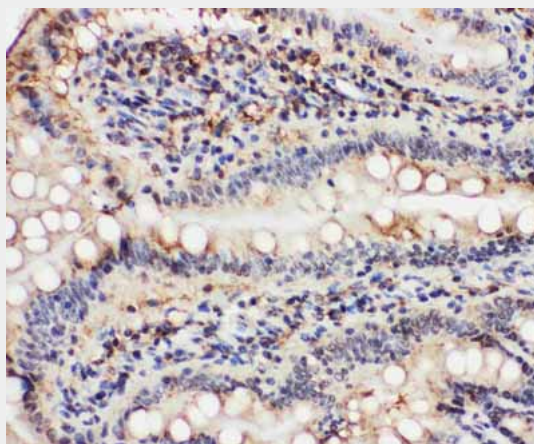
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-VCP Antibody - Images

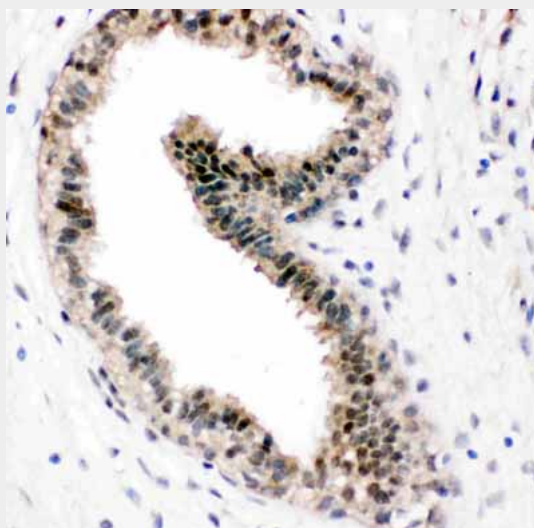




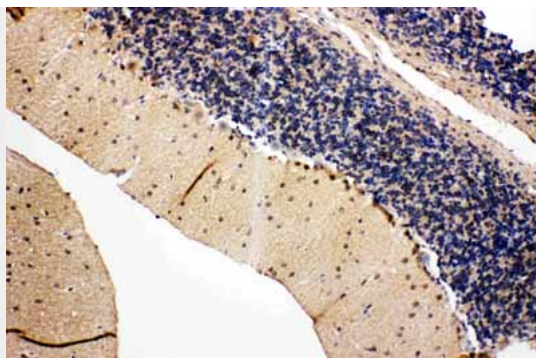
Anti-VCP antibody, ABO11447, IHC(P)IHC(P): Rat Epinephros Tissue



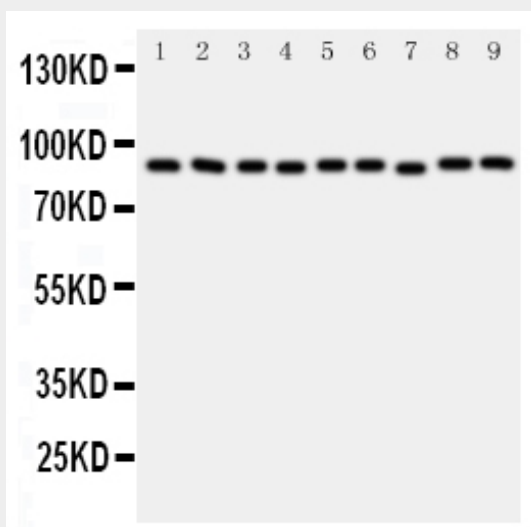
Anti-VCP antibody, ABO11447, IHC(P)IHC(P): Rat Intestine Tissue



Anti-VCP antibody, ABO11447, IHC(P)IHC(P): Human Mammary Cancer Tissue



Anti-VCP antibody, ABO11447, IHC(P)IHC(P): Rat Cerebellum Tissue



Anti-VCP antibody, ABO11447, Western blottingAll lanes: Anti VCP (PA 2137) at 0.5ug/mlLane 1: Rat Brain Tissue Lysate at 50ugLane 2: Rat Kidney Tissue Lysate at 50ugLane 3: Rat Liver Tissue Lysate at 50ugLane 4: Rat Lung Tissue Lysate at 50ugLane 5: HELA Whole Cell Lysate at 40ugLane 6: HL-60 Whole Cell Lysate at 40ugLane 7: A431 Whole Cell Lysate at 40ugLane 8: A549 Whole Cell Lysate at 40ugLane 9: SMMC Whole Cell Lysate at 40ugPredicted bind size: 89KDObserved bind size: 89KD



Anti-VCP antibody, ABO11447, IHC(F)IHC(F): Rat Intestine Tissue

Anti-VCP Antibody - Background

Valosin-containing protein also called CDC48 is an enzyme that in humans is encoded by the VCP gene. It is a member of the AAA+ (ATPase associated with various activities) protein family. The VCP gene maps to chromosome 9p13.3. It is necessary for the fragmentation of Golgi stacks during mitosis and for their reassembly after mitosis. It is involved in the formation of the transitional endoplasmic reticulum. This gene plays a role in vesicle transport and fusion, 26S proteasome function, and assembly of peroxisomes. It also involved in DNA damage response: recruited to double-strand breaks (DSBs) sites in a RNF8- and RNF168-dependent manner and promotes the recruitment of TP53BP1 at DNA damage sites.