

VCP Antibody

✓ 100 µl
(10 Western mini-blot)

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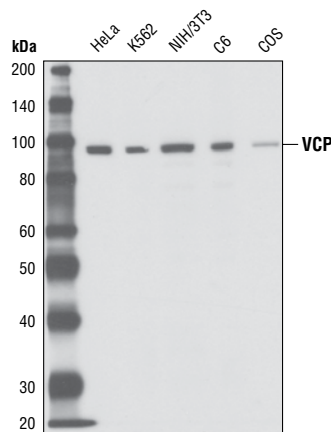
This product is for *in vitro* research use only and is not intended for use in humans or animals.
This product is not intended for use as a therapeutic or in diagnostic procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IF-IC, F	H, M, R, Mk, (B, X, Z, Sc)	89 kDa	Rabbit**

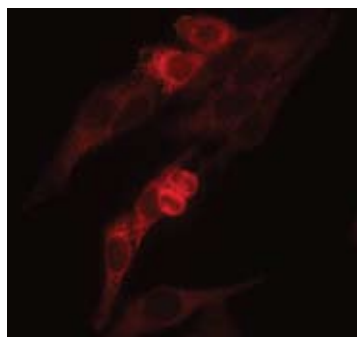
Background: Valosin-containing protein (VCP) is a highly conserved and abundant 97 kDa protein that belongs to the AAA (ATPase associated with a variety of cellular activities) family of proteins. VCP assembles as a homo-hexamer, forming a ring with a channel at its center (1,2,3). VCP homo-hexamers associate with a variety of protein cofactors to form many distinct protein complexes, which act as chaperones to unfold proteins and transport them to specific cellular compartments or to the proteasome (4). These protein complexes participate in many cellular functions, including vesicle transport and fusion, fragmentation and reassembly of the golgi stacks during mitosis, nuclear envelope formation and spindle disassembly following mitosis, cell cycle regulation, DNA damage repair, apoptosis, B- and T-cell activation, NF-κB-mediated transcriptional regulation, endoplasmic reticulum (ER)-associated degradation and protein degradation (4). VCP appears to localize mainly to the endoplasmic reticulum; however, tyrosine phosphorylation is associated with relocalization to the centrosome during mitosis (5). In addition, following cellular exposure to ionizing radiation, VCP is phosphorylated at Ser784 in an ATM-dependent manner and accumulates in the nucleus at sites of double-stranded DNA breaks (DSBs) (6). Exposure to other types of DNA damaging agents such as UV light, bleomycin or doxorubicin results in phosphorylation of VCP by ATR and DNA-PK in an ATM-independent manner (6).

Specificity/Sensitivity: This antibody detects endogenous levels of total VCP protein.

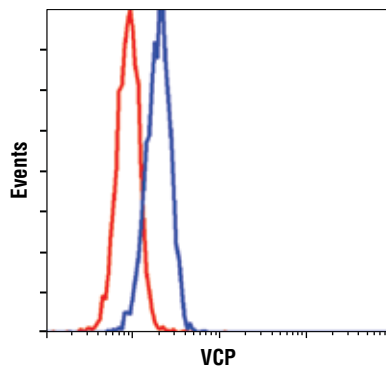
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to human VCP protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from HeLa, K562, NIH/3T3, C6 and COS cells, using VCP Antibody.



Immunofluorescence staining of paraformaldehyde-fixed HeLa cells, using VCP Antibody.



◀ Flow cytometric analysis of K562 cells, using VCP Antibody (blue) compared to a nonspecific negative control antibody (red).

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. *Do not aliquot the antibody.*

*Species cross-reactivity is determined by Western blot.
**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western blotting 1:1000
Immunofluorescence (IF-IC) 1:50
Flow Cytometry 1:50

For application specific protocols please see the web page for this product at www.cellsignal.com.

Companion Products:

Phospho-ATM (Ser1981) (10H11.E12) Mouse mAb #4526
Phospho-ATR (Ser428) Antibody #2853
DNA-PK Antibody #4602
Phototope®-HRP Western Blot Detection System, Anti-rabbit IgG, HRP-linked Antibody #7071
Anti-rabbit IgG, HRP-linked Antibody #7074
Prestained Protein Marker, Broad Range (Premixed Format) #7720
Biotinylated Protein Ladder Detection Pack #7727
20X LumiGLO® Reagent and 20X Peroxide #7003

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

- (1) DeLaBarre, B. and Brunger, A.T. (2003) *Nat. Struct. Biol.* 10, 856–863.
- (2) Huyton, T. et al. (2003) *J. Struct. Biol.* 144, 337–348.
- (3) Dreveny, I. et al. (2004) *EMBO J* 23, 1030–1039.
- (4) Wang, Q. et al. (2004) *J. Struct. Biol.* 146, 44–57.
- (5) Madeo, F. et al. (1998) *Mol. Biol. Cell* 9, 131–141.
- (6) Livingstone, M. et al. (2005) *Cancer Res.* 65, 7533–7540.

IMPORTANT: For Western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E—ELISA E-P—ELISA Peptide

Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebra fish B—bovine

Dg—dog Pg—pig Sc—S. cerevisiae All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.