

VCP (5): sc-57492



The Power to Question

BACKGROUND

Valosin containing protein (VCP), also designated TERA (for transitional endoplasmic reticulum ATPase) or p97, is a member of the AAA family of ATPases, which are involved in a variety of cellular activities. VCP is the mammalian homolog of *Saccharomyces cerevisiae* Cdc48, a protein essential for the completion of mitosis in yeast. VCP is thought to be involved in a variety of membrane functions and in the regulation of the cell cycle. It associates with ubiquitinated $\text{I}\kappa\text{B-}\alpha$ as well as with the 26S Proteasome, indicating a potential role for VCP in the proteasome-mediated degradation of $\text{I}\kappa\text{B-}\alpha$.

CHROMOSOMAL LOCATION

Genetic locus: VCP (human) mapping to 9p13.3; Vcp (mouse) mapping to 4 A5.

SOURCE

VCP (5) is a mouse monoclonal antibody raised against amino acids 792-806 of VCP of human origin.

PRODUCT

Each vial contains 200 μg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

VCP (5) is available conjugated to agarose (sc-57492 AC), 500 $\mu\text{g}/0.25$ ml agarose in 1 ml, for IP; to HRP (sc-57492 HRP), 200 $\mu\text{g}/\text{ml}$, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-57492 PE), fluorescein (sc-57492 FITC), Alexa Fluor[®] 488 (sc-57492 AF488), Alexa Fluor[®] 546 (sc-57492 AF546), Alexa Fluor[®] 594 (sc-57492 AF594) or Alexa Fluor[®] 647 (sc-57492 AF647), 200 $\mu\text{g}/\text{ml}$, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-57492 AF680) or Alexa Fluor[®] 790 (sc-57492 AF790), 200 $\mu\text{g}/\text{ml}$, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

VCP (5) is recommended for detection of VCP of mouse, rat, human and porcine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for VCP siRNA (h): sc-37187, VCP siRNA (m): sc-37188, VCP shRNA Plasmid (h): sc-37187-SH, VCP shRNA Plasmid (m): sc-37188-SH, VCP shRNA (h) Lentiviral Particles: sc-37187-V and VCP shRNA (m) Lentiviral Particles: sc-37188-V.

Molecular Weight of VCP: 97 kDa.

Positive Controls: A549 cell lysate: sc-2413, SH-SY5Y cell lysate: sc-3812 or 3T3-L1 cell lysate: sc-2243.

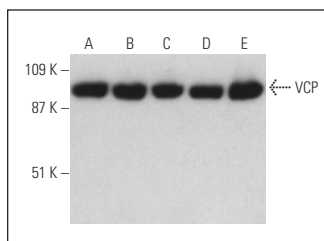
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

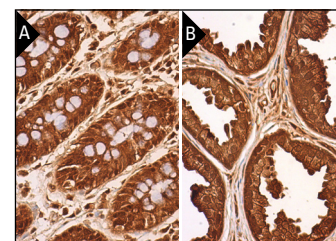
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



VCP (5) HRP: sc-57492 HRP. Direct western blot analysis of VCP expression in A549 (A), SH-SY5Y (B), 3T3-L1 (C), KNRK (D) and L8 (E) whole cell lysates.



VCP (5): sc-57492. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing nuclear and cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing nuclear, cytoplasmic and membrane staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Locke, M., et al. 2014. Lys11- and Lys48-linked ubiquitin chains interact with p97 during endoplasmic-reticulum-associated degradation. *Biochem. J.* 459: 205-216.
- Rossin, F., et al. 2015. Transglutaminase 2 ablation leads to mitophagy impairment associated with a metabolic shift towards aerobic glycolysis. *Cell Death Differ.* 22: 408-418.
- Her, N.G., et al. 2016. P97 composition changes caused by allosteric inhibition are suppressed by an on-target mechanism that increases the Enzyme's ATPase activity. *Cell Chem. Biol.* 23: 517-528.
- Weith, M., et al. 2018. Ubiquitin-independent disassembly by a p97 AAA-ATPase complex drives PP1 holoenzyme formation. *Mol. Cell* 72: 766-777.e6.
- Carissimo, G., et al. 2019. VCP/p97 is a proviral host factor for replication of chikungunya virus and other alphaviruses. *Front. Microbiol.* 10: 2236.
- Her, N.G., et al. 2020. Thrombospondin-1 counteracts the p97 inhibitor CB-5083 in colon carcinoma cells. *Cell Cycle* 19: 1590-1601.
- Tolay, N. and Buchberger, A. 2021. Comparative profiling of stress granule clearance reveals differential contributions of the ubiquitin system. *Life Sci. Alliance* 4: e202000927.
- Kröning, A., et al. 2022. Ubiquitin-directed AAA+ ATPase p97/VCP unfolds stable proteins crosslinked to DNA for proteolysis by SPRTN. *J. Biol. Chem.* 298: 101976.
- van den Boom, J., et al. 2023. Structural basis of ubiquitin-independent PP1 complex disassembly by p97. *EMBO J.* 42: e113110.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.