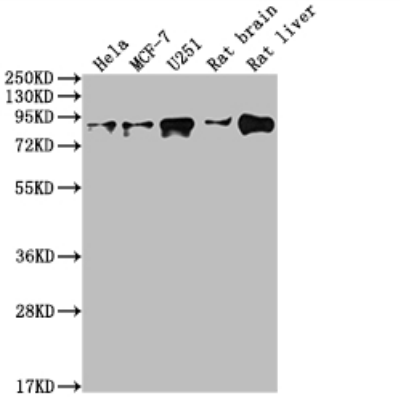
# VCP Antibody

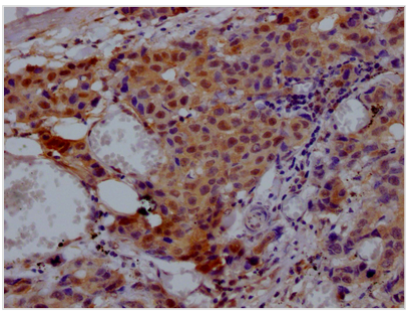
| | |
|---|---|
| **Product Code** | CSB-RA182227A0HU |
| **Storage** | Upon receipt, store at -20°C or -80°C. Avoid repeated freeze. |
| **Uniprot No.** | P55072 |
| **Immunogen** | A synthesized peptide derived from human VCP |
| **Species Reactivity** | Human, Rat |
| **Tested Applications** | ELISA, WB, IHC, IF, IP; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200, IF:1:20-1:200, IP:1:200-1:1000 |
| **Relevance** | 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. 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). 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, PubMed: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:23042607, PubMed:23042605). 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). Acts as a negative regulator of type I interferon production by interacting with DDX58/RIG-I: interaction takes place when DDX58/RIG-I is ubiquitinated via 'Lys-63'-linked ubiquitin on its CARD domains, leading to recruit RNF125 and promote ubiquitination and degradation of DDX58/RIG-I (PubMed:26471729). |
| **Form** | Liquid |
| **Conjugate** | Non-conjugated |

| | |
|---|---|
| **Storage Buffer** | Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. |
| **Purification Method** | Affinity-chromatography |
| **Isotype** | Rabbit IgG |
| **Clonality** | Monoclonal |
| **Product Type** | Recombinant Antibody |
| **Immunogen Species** | Homo sapiens (Human) |
| **Research Area** | Neuroscience; Metabolism; Signal transduction |
| **Gene Names** | VCP |
| **Accession NO.** | 5H12 |

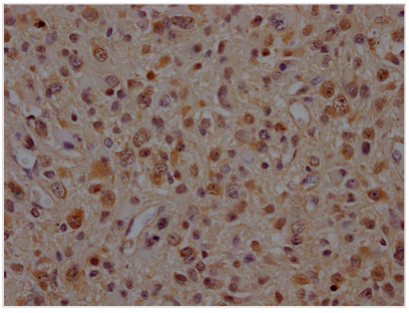
**Image**



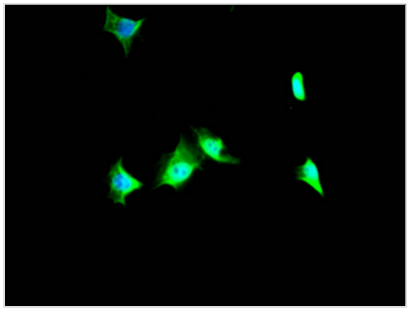

Western Blot
Positive WB detected in: Hela whole cell lysate, MCF-7 whole cell lysate, U251 whole cell lysate, Rat brain tissue, Rat liver tissue
All lanes: VCP antibody at 1:2000
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 90 kDa
Observed band size: 90 kDa



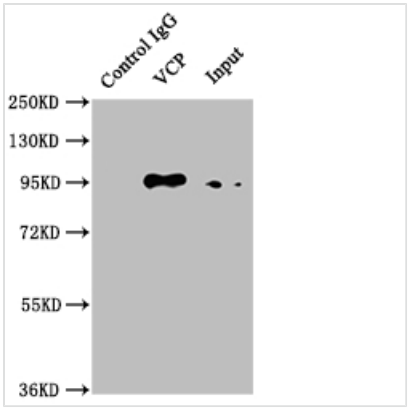
IHC image of CSB-RA182227A0HU diluted at 1:100 and staining in paraffin-embedded human breast cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



IHC image of CSB-RA182227A0HU diluted at 1:100 and staining in paraffin-embedded human glioma cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



Immunofluorescence staining of SY5Y Cells with CSB-RA182227A0HU at 1:50, counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeated by 0.2% TritonX-100, and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4°C. Nuclear DNA was labeled in blue with DAPI. The secondary antibody was FITC-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L).




Immunoprecipitating VCP in U251 whole cell lysate
Lane 1: Rabbit control IgG instead of CSB-RA182227A0HU in U251 whole cell lysate. For western blotting,a HRP-conjugated Protein G antibody was used as the secondary antibody (1/2000)
Lane 2: CSB-RA182227A0HU(2μg)+ U251 whole cell lysate(500μg)
Lane 3: U251 whole cell lysate (10μg)

## Description

The VCP gene genes for valosin-containing protein, which belongs to the AAA(+) ATPase family of chaperone-like proteins that govern chromatin organization, cell cycle control, membrane fusion, ubiquitin-dependent protein degradation, and autophagy, among other cellular processes. Mutations in VCP have been shown to be the cause of inclusion body myopathy, Paget's disease and frontotemporal dementia (IBMPFD), and amyotrophic lateral sclerosis (ALS), among other degenerative diseases. VCP has also been linked to cancer. High expression of VCP has been detected in non-small cell lung carcinoma and is linked to tumor progression and prognosis.

The generation of the recombinant VCP antibody includes obtaining the VCP antibody gene, cloning the gene into a plasma vector, introducing the recombinant vector into mammalian cell lines, and achieving expression of adequate amounts of functional antibody. The recombinant VCP antibody was purified using A synthesized peptide derived from human VCP. It is reactive with the VCP protein from Human, Rat and is suitable for the use in the ELISA, WB, IHC, IF, IP.