

**SQSTM1 (p62) Antibody (C-term)**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP2183B**

**Specification**

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**SQSTM1 (p62) Antibody (C-term) - Product Information**

Application	IF, WB, IHC-P,E
Primary Accession	<a href="#">Q13501</a>
Other Accession	<a href="#">O08623</a> , <a href="#">Q64337</a>
Reactivity	Human, Mouse
Predicted	Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Antigen Region	317-346

**SQSTM1 (p62) Antibody (C-term) - Additional Information**

**Gene ID** 8878

**Other Names**

Sequestosome-1, EBI3-associated protein of 60 kDa, EBIAP, p60, Phosphotyrosine-independent ligand for the Lck SH2 domain of 62 kDa, Ubiquitin-binding protein p62, SQSTM1, ORCA, OSIL

**Target/Specificity**

This SQSTM1 (p62) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 317-346 amino acids of human SQSTM1 (p62).

**Dilution**

IF~~1:50~100  
WB~~1:2000  
IHC-P~~1:25

**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

**Storage**

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

SQSTM1 (p62) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

**SQSTM1 (p62) Antibody (C-term) - Protein Information**

**Name** SQSTM1 {ECO:0000303|PubMed:16286508, ECO:0000312|HGNC:HGNC:11280}

**Function** Molecular adapter required for selective macroautophagy (aggrephagy) by acting as a bridge between polyubiquitinated proteins and autophagosomes (PubMed:[15340068](#), PubMed:[15953362](#), PubMed:[16286508](#), PubMed:[17580304](#), PubMed:[20168092](#), PubMed:[22017874](#), PubMed:[22622177](#), PubMed:[24128730](#), PubMed:[28404643](#), PubMed:[29343546](#), PubMed:[29507397](#), PubMed:[31857589](#), PubMed:[33509017](#), PubMed:[34471133](#), PubMed:[34893540](#), PubMed:[35831301](#), PubMed:[37306101](#), PubMed:[37802024](#)). Promotes the recruitment of ubiquitinated cargo proteins to autophagosomes via multiple domains that bridge the proteins and organelles in different steps (PubMed:[16286508](#), PubMed:[20168092](#), PubMed:[22622177](#), PubMed:[24128730](#), PubMed:[28404643](#), PubMed:[29343546](#), PubMed:[29507397](#), PubMed:[34893540](#), PubMed:[37802024](#)). SQSTM1 first mediates the assembly and removal of ubiquitinated proteins by undergoing liquid-liquid phase separation upon binding to ubiquitinated proteins via its UBA domain, leading to the formation of insoluble cytoplasmic inclusions, known as p62 bodies (PubMed:[15911346](#), PubMed:[20168092](#), PubMed:[22017874](#), PubMed:[24128730](#), PubMed:[29343546](#), PubMed:[29507397](#), PubMed:[31857589](#), PubMed:[37802024](#)). SQSTM1 then interacts with ATG8 family proteins on autophagosomes via its LIR motif, leading to p62 body recruitment to autophagosomes, followed by autophagic clearance of ubiquitinated proteins (PubMed:[16286508](#), PubMed:[17580304](#), PubMed:[20168092](#), PubMed:[22622177](#), PubMed:[24128730](#), PubMed:[28404643](#), PubMed:[37802024](#)). SQSTM1 is itself degraded along with its ubiquitinated cargos (PubMed:[16286508](#), PubMed:[17580304](#), PubMed:[37802024](#)). Also required to recruit ubiquitinated proteins to PML bodies in the nucleus (PubMed:[20168092](#)). Also involved in autophagy of peroxisomes (pexophagy) in response to reactive oxygen species (ROS) by acting as a bridge between ubiquitinated PEX5 receptor and autophagosomes (PubMed:[26344566](#)). Acts as an activator of the NFE2L2/NRF2 pathway via interaction with KEAP1: interaction inactivates the BCR(KEAP1) complex by sequestering the complex in inclusion bodies, promoting nuclear accumulation of NFE2L2/NRF2 and subsequent expression of cytoprotective genes (PubMed:[20452972](#), PubMed:[28380357](#), PubMed:[33393215](#), PubMed:[37306101](#)). Promotes relocalization of 'Lys-63'-linked ubiquitinated STING1 to autophagosomes (PubMed:[29496741](#)). Involved in endosome organization by retaining vesicles in the perinuclear cloud: following ubiquitination by RNF26, attracts specific vesicle-associated adapters, forming a molecular bridge that restrains cognate vesicles in the perinuclear region and organizes the endosomal pathway for efficient cargo transport (PubMed:[27368102](#), PubMed:[33472082](#)). Sequesters tensin TNS2 into cytoplasmic puncta, promoting TNS2 ubiquitination and proteasomal degradation (PubMed:[25101860](#)). May regulate the activation of NFKB1 by TNF-alpha, nerve growth factor (NGF) and interleukin-1 (PubMed:[10356400](#), PubMed:[10747026](#), PubMed:[11244088](#), PubMed:[12471037](#), PubMed:[16079148](#), PubMed:[19931284](#)). May play a role in titin/TTN downstream signaling in muscle cells (PubMed:[15802564](#)). Adapter that mediates the interaction between TRAF6 and CYLD (By similarity).

### Cellular Location

Cytoplasmic vesicle, autophagosome. Preautophagosomal structure. Cytoplasm, cytosol. Nucleus, PML body. Late endosome. Lysosome. Nucleus Endoplasmic reticulum. Cytoplasm, myofibril, sarcomere {ECO:0000250|UniProtKB:O08623}. Note=In cardiac muscle, localizes to the sarcomeric band (By similarity). Localizes to cytoplasmic membraneless inclusion bodies, known as p62 bodies, containing polyubiquitinated protein aggregates (PubMed:[11786419](#), PubMed:[20357094](#), PubMed:[22017874](#), PubMed:[29343546](#), PubMed:[29507397](#), PubMed:[31857589](#), PubMed:[37306101](#), PubMed:[37802024](#)). In neurodegenerative diseases, detected in Lewy bodies in Parkinson disease, neurofibrillary tangles in Alzheimer disease, and HTT aggregates in Huntington disease (PubMed:[15158159](#)). In protein aggregate diseases of the liver, found in large amounts in Mallory bodies of alcoholic and nonalcoholic steatohepatitis, hyaline bodies in hepatocellular carcinoma, and in SERPINA1 aggregates (PubMed:[11981755](#)). Enriched in Rosenthal fibers of pilocytic astrocytoma (PubMed:[11786419](#)). In the cytoplasm, observed in both membrane-free ubiquitin-containing protein aggregates (sequestosomes) and membrane- surrounded autophagosomes (PubMed:[15953362](#), PubMed:[17580304](#)). Colocalizes with TRIM13 in the perinuclear endoplasmic reticulum (PubMed:[22178386](#)). Co-localizes with TRIM5 in cytoplasmic bodies (PubMed:[20357094](#)). When nuclear export is blocked by treatment with leptomycin B, accumulates in PML bodies (PubMed:[20168092](#)) {ECO:0000250|UniProtKB:O08623,

ECO:0000269|PubMed:11786419, ECO:0000269|PubMed:11981755,  
ECO:0000269|PubMed:15158159, ECO:0000269|PubMed:15953362,  
ECO:0000269|PubMed:17580304, ECO:0000269|PubMed:20168092,  
ECO:0000269|PubMed:20357094, ECO:0000269|PubMed:22017874,  
ECO:0000269|PubMed:22178386, ECO:0000269|PubMed:29343546,  
ECO:0000269|PubMed:29507397, ECO:0000269|PubMed:31857589,  
ECO:0000269|PubMed:37306101, ECO:0000269|PubMed:37802024}

#### Tissue Location

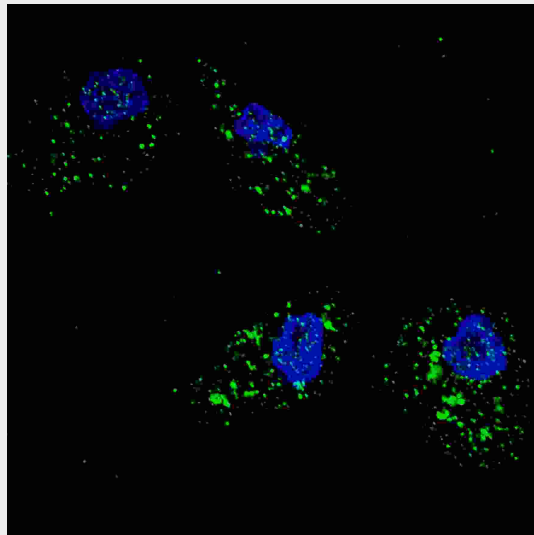
Ubiquitously expressed.

#### SQSTM1 (p62) Antibody (C-term) - Protocols

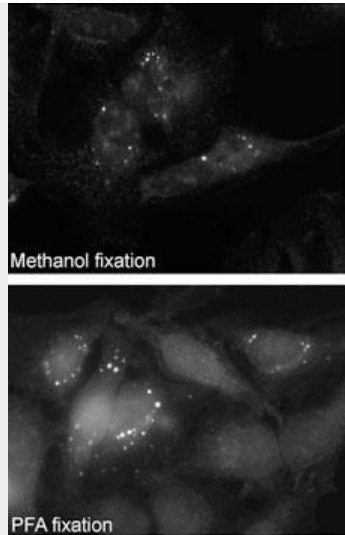
Provided below are standard protocols that you may find useful for product applications.

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

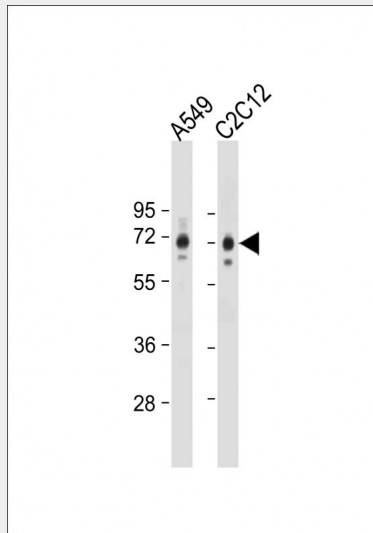
#### SQSTM1 (p62) Antibody (C-term) - Images



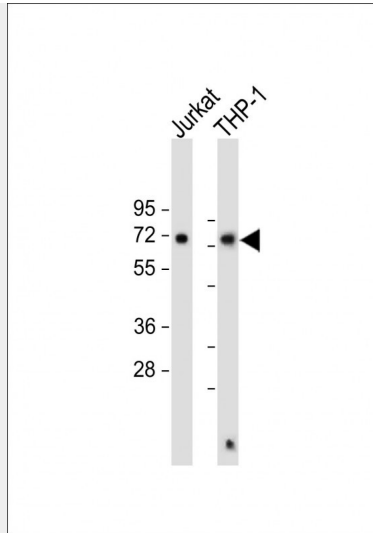
Fluorescent image of U251 cells stained with SQSTM1 (p62) (C-term) antibody. U251 cells were treated with Chloroquine (50  $\mu$ M, 16h), then fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min). Cells were then incubated with AP2183b SQSTM1 (p62) (C-term) primary antibody (1:200, 2 h at room temperature). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:1000, 1h). Nuclei were counterstained with Hoechst 33342 (blue) (10  $\mu$ g/ml, 5 min). SQSTM1 (p62) immunoreactivity is localized to autophagic vacuoles in the cytoplasm of U251 cells, supported by Human Protein Atlas Data (<http://www.proteinatlas.org/ENSG00000161011>).



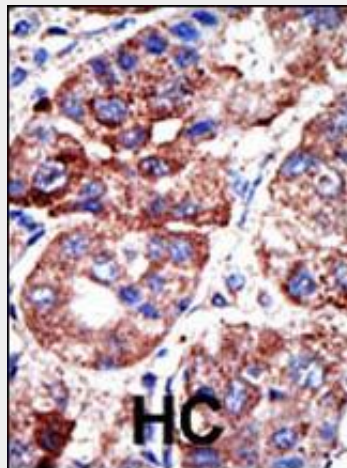
Immunofluorescence staining of Autophagy SQSTM1 (p62) Antibody (C-term) (Cat# AP2183b) on Methanol-fixed and PFA fixed HeLa cells. Data courtesy of Dr. Eeva-Liisa Eskelinen, University of Helsinki, Finland.



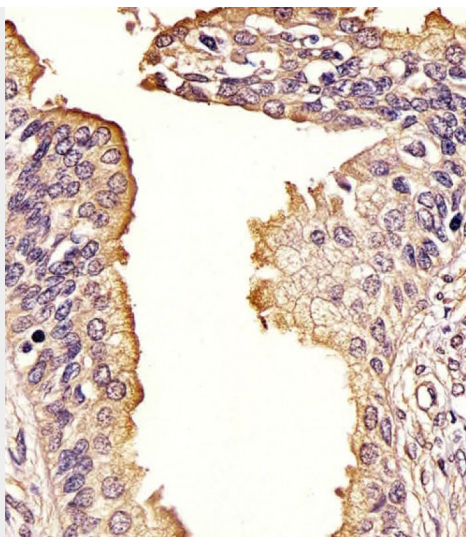
All lanes : Anti-SQSTM1 (p62) Antibody (C-term) at 1:2000 dilution Lane 1: A549 whole cell lysate Lane 2: C2C12 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 48 kDa Blocking/Dilution buffer: 5% NFDm/TBST.



All lanes : Anti-SQSTM1 (p62) Antibody (C-term) at 1:2000 dilution Lane 1: Jurkat whole cell lysate  
Lane 2: THP-1 whole cell lysate Lysates/proteins at 20  $\mu$ g per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 48 kDa  
Blocking/Dilution buffer: 5% NFDN/TBST.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



AP2183b staining SQSTM1 in Human prostate tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0.5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hours at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.

#### **SQSTM1 (p62) Antibody (C-term) - Background**

SQSTM1/p62 is an adapter protein which binds ubiquitin and may regulate the activation of NF $\kappa$ B1 by TNF- $\alpha$ , nerve growth factor (NGF) and interleukin-1. This protein may play a role in titin/TTN downstream signaling in muscle cells, and may also regulate signaling cascades through ubiquitination. This protein is involved in cell differentiation, apoptosis, immune response and regulation of K(+) channels. SQSTM1/p62 also appears to play a role in macroautophagic removal of intracellular protein aggregates. Cellular depletion studies of SQSTM1/p62 have indicated a role for association with LC3 and aggregate proteins in order to facilitate normal formation of the autophagosome.

#### **SQSTM1 (p62) Antibody (C-term) - References**

References for protein:

1. Seibenhener, M.L., et al., Mol. Cell. Biol. 24(18):8055-8068 (2004).
2. Eekhoff, E.W., et al., Arthritis Rheum. 50(5):1650-1654 (2004).
3. Brajenovic, M., et al., J. Biol. Chem. 279(13):12804-12811 (2004).
4. Kuusisto, E., et al., J. Neuropathol. Exp. Neurol. 62(12):1241-1253 (2003).
5. Johnson-Pais, T.L., et al., J. Bone Miner. Res. 18(10):1748-1753 (2003).

References for U251 cell line:

1. Westermark B.; Pontén J.; Hugosson R. (1973). "Determinants for the establishment of permanent tissue culture lines from human gliomas". Acta Pathol Microbiol Scand A. 81:791-805. [PMID: 4359449].
2. Pontén, J., Westermark B. (1978). "Properties of Human Malignant Glioma Cells in Vitro". Medical Biology 56: 184-193. [PMID: 359950].
3. Geng Y.; Kohli L.; Klocke B.J.; Roth K.A. (2010). "Chloroquine-induced autophagic vacuole accumulation and cell death in glioma cells is p53 independent". Neuro Oncol. 12(5): 473-481. [PMID: 20406898].

#### **SQSTM1 (p62) Antibody (C-term) - Citations**

- [Zinc oxide nanoparticles induces cell death and consequently leading to incomplete neural tube closure through oxidative stress during embryogenesis.](#)
- [Cholesteryl hemiazelate causes lysosome dysfunction impacting vascular smooth muscle](#)

cell homeostasis

- [Expression and prognostic significance of the DNA damage response pathway and autophagy markers in gastric cancer](#)
- [TXNIP/VDUP1 attenuates steatohepatitis via autophagy and fatty acid oxidation](#)
- [Rapamycin induces megakaryocytic differentiation through increasing autophagy in Dami cells](#)
- [Enteritidis Effector AvrA Suppresses Autophagy by Reducing Beclin-1 Protein](#)
- [Axonal autophagosome maturation defect through failure of ATG9A sorting underpins pathology in AP-4 deficiency syndrome](#)
- [The p53 inactivators pifithrin- \$\mu\$  and pifithrin- \$\alpha\$  mitigate TBI-induced neuronal damage through regulation of oxidative stress, neuroinflammation, autophagy and mitophagy](#)
- [Helicobacter pylori cholesterol glucosylation modulates autophagy for increasing intracellular survival in macrophages](#)
- [Genistein and Myd88 Activate Autophagy in High Glucose-Induced Renal Podocytes In Vitro](#)
- [Honokiol inhibits in vitro and in vivo growth of oral squamous cell carcinoma through induction of apoptosis, cell cycle arrest and autophagy](#)
- [Up-regulation of autophagy is a mechanism of resistance to chemotherapy and can be inhibited by pantoprazole to increase drug sensitivity](#)
- [Deletion of the BH3-only protein Noxa alters electrographic seizures but does not protect against hippocampal damage after status epilepticus in mice](#)
- [Role of Autophagy as a Survival Mechanism for Hypoxic Cells in Tumors](#)
- [Interference with HMGB1 increases the sensitivity to chemotherapy drugs by inhibiting HMGB1-mediated cell autophagy and inducing cell apoptosis](#)
- [Effect of pantoprazole to enhance activity of docetaxel against human tumour xenografts by inhibiting autophagy](#)
- [Intestinal epithelial vitamin D receptor deletion leads to defective autophagy in colitis](#)
- [Inhibition of Intracellular Clusterin Attenuates Cell Death in Nephropathic Cystinosis](#)
- [A novel sulindac derivative inhibits lung adenocarcinoma cell growth through suppression of Akt/mTOR signaling and induction of autophagy](#)
- [Potent obatoclax cytotoxicity and activation of triple death mode killing across infant acute lymphoblastic leukemia](#)
- [p62/SOSTM1 prominently accumulates in renal proximal tubules in nephropathic cystinosis](#)
- [Curcumin induces autophagy to protect vascular endothelial cell survival from oxidative stress damage](#)
- [Increased hippocampal accumulation of autophagosomes predicts short-term recognition memory impairment in aged mice](#)
- [Induction of an incomplete autophagic response by cancer-preventive geranylgeranoic acid \(GGA\) in a human hepatoma-derived cell line](#)
- [Overexpression of the autophagic beclin-1 protein clears mutant ataxin-3 and alleviates Machado-Joseph disease](#)
- [Autophagy negatively regulates keratinocyte inflammatory responses via scaffolding protein p62/SOSTM1](#)
- [Roles of SIRT1 in the acute and restorative phases following induction of inflammation](#)
- [Invasion and multiplication of Helicobacter pylori in gastric epithelial cells and implications for antibiotic resistance](#)
- [Autophagy induction with RAD001 enhances chemosensitivity and radiosensitivity through Met inhibition in papillary thyroid cancer](#)
- [Epidermal growth factor reduces autophagy in intestinal epithelium and in the rat model of necrotizing enterocolitis](#)
- [Helicobacter pylori impairs murine dendritic cell responses to infection](#)
- [Transcription factor GATA4 inhibits doxorubicin-induced autophagy and cardiomyocyte death](#)
- [Absence of autophagy results in reactive oxygen species-dependent amplification of RLR signaling](#)
- [Impaired protein aggregate handling and clearance underlie the pathogenesis of](#)

[p97/VCP-associated disease.](#)