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Sqstm1(S351) Blocking Peptide

Synthetic peptide
Catalog # BP20690b

Specification

Sqstm1(S351) Blocking Peptide - Product Information

Primary Accession	Q64337
Other Accession	O08623, Q13501

Sqstm1(S351) Blocking Peptide - Additional Information

Gene ID 18412

Other Names
Sequestosome-1, STONE14, Ubiquitin-binding protein p62, Sqstm1, A170, STAP

Target/Specificity
The synthetic peptide sequence is selected from aa 346-359 of HUMAN Sqstm1

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Sqstm1(S351) Blocking Peptide - Protein Information

Name Sqstm1 {ECO:0000303|PubMed:16286508, ECO:0000312|MGI:MGI:107931}

Function
Molecular adapter required for selective macroautophagy (aggrephagy) by acting as a a bridge between polyubiquitinated proteins and autophagosomes (PubMed:25723488, PubMed:33397898, PubMed:37306101). Promotes the recruitment of ubiquitinated cargo proteins to autophagosomes via multiple domains that bridge proteins and organelles in different steps (PubMed:25723488, PubMed:33397898). 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:33397898). 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:33397898). SQSTM1 is itself degraded along with its ubiquitinated cargos (By similarity). Also required to recruit ubiquitinated proteins to PML bodies in the nucleus (By similarity). 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 (By similarity). 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:20173742, PubMed:20421418, PubMed:33397898, PubMed:37306101, PubMed:24011591). Promotes relocalization of 'Lys-63'-linked ubiquitinated STING1 to autophagosomes (By similarity). 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 (By similarity). Sequesters tensin TNS2 into cytoplasmic puncta, promoting TNS2 ubiquitination and proteasomal degradation (By similarity). May regulate the activation of NFKB1 by TNF-alpha, nerve growth factor (NGF) and interleukin-1 (By similarity). May play a role in titin/TTN downstream signaling in muscle cells (By similarity). Adapter that mediates the interaction between TRAF6 and CYLD (PubMed:14960283, PubMed:18382763).

Cellular Location
Cytoplasmic vesicle, autophagosome {ECO:0000250|UniProtKB:Q13501}. Preautophagosomal structure {ECO:0000250|UniProtKB:Q13501}. Cytoplasm, cytosol. Nucleus, PML body {ECO:0000250|UniProtKB:Q13501}. Late endosome {ECO:0000250|UniProtKB:Q13501}. Lysosome {ECO:0000250|UniProtKB:Q13501}. Nucleus Endoplasmic reticulum {ECO:0000250|UniProtKB:Q13501}. 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:20421418, PubMed:33397898). 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 (By similarity). Enriched in Rosenthal fibers of pilocytic astrocytoma (By similarity). In the cytoplasm, observed in both membrane-free ubiquitin-containing protein aggregates (sequestosomes) and membrane-surrounded autophagosomes (By similarity) Colocalizes with TRIM13 in the perinuclear endoplasmic reticulum (By similarity). Co-localizes with TRIM5 in cytoplasmic bodies (By similarity). When nuclear export is blocked by treatment with leptomycin B, accumulates in PML bodies (By similarity) {ECO:0000250|UniProtKB:O08623, ECO:0000250|UniProtKB:Q13501, ECO:0000269|PubMed:20421418, ECO:0000269|PubMed:33397898}

Tissue Location
Widely expressed..

Sqstm1(S351) Blocking Peptide - Protocols

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

- Blocking Peptides

Sqstm1(S351) Blocking Peptide - Images

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Sqstm1(S351) Blocking Peptide - Background

Required both for the formation and autophagic degradation of polyubiquitin-containing bodies, called ALIS (aggresome-like induced structures). Links ALIS to the autophagic machinery via direct interaction with MAP1 LC3 family members. May regulate the activation of NFKB1 by TNF-alpha, nerve growth factor (NGF) and interleukin-1. May play a role in titin/TTN downstream signaling in muscle cells. May regulate signaling cascades through ubiquitination. May be involved in cell differentiation, apoptosis, immune response and regulation of K(+) channels. Adapter that mediates the interaction between TRAF6 and CYLD.

Sqstm1(S351) Blocking Peptide - References

Ishii T.,et al.Biochem. Biophys. Res. Commun. 226:456-460(1996).
Morris J.C.,et al.Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
Carninci P.,et al.Science 309:1559-1563(2005).
Church D.M.,et al.PLoS Biol. 7:E1000112-E1000112(2009).
Ishii T.,et al.Biochem. Biophys. Res. Commun. 232:33-37(1997).