Revision 1

#95697 Store at -20C

# Phospho-SQSTM1/p62 (Ser349) Antibody

Cell Signaling TECHNOLOGY®

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|---|
| WB | H M | Endogenous | 62 | Rabbit | #Q13501 | 8878 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |

## 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.

## Specificity / Sensitivity

Phospho-SQSTM1/p62 (Ser349) Antibody recognizes endogenous levels of SQSTM1/p62 protein only when phosphorylated at Ser349.

## Species predicted to react based on 100% sequence homology:

Rat

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser349 of human SQSTM1/p62 protein. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

Sequestosome 1 (SQSTM1, p62) is a ubiquitin binding protein involved in cell signaling, oxidative stress, and autophagy (1-4). It was first identified as a protein that binds to the SH2 domain of p56Lck (5) and independently found to interact with PKCζ (6,7). SQSTM1 was subsequently found to interact with ubiquitin, providing a scaffold for several signaling proteins and triggering degradation of proteins through the proteasome or lysosome (8). Interaction between SQSTM1 and TRAF6 leads to the K63-linked polyubiquitination of TRAF6 and subsequent activation of the NF-κB pathway (9). Protein aggregates formed by SQSTM1 can be degraded by the autophagosome (4,10,11). SQSTM1 binds autophagosomal membrane protein LC3/Atg8, bringing SQSTM1-containing protein aggregates to the autophagosome (12). Lysosomal degradation of autophagosomes leads to a decrease in SQSTM1 levels during autophagy; conversely, autophagy inhibitors stabilize SQSTM1 levels. Studies have demonstrated a link between SQSTM1 and oxidative stress. SQSTM1 interacts with KEAP1, which is a cytoplasmic inhibitor of NRF2, a key transcription factor involved in cellular responses to oxidative stress (3). Thus, accumulation of SQSTM1 can lead to an increase in NRF2 activity.
Phosphorylation of SQSTM1 at Ser349 (Ser351 in mouse) during oxidative stress increases its binding to KEAP1, thereby increasing NRF2 activity (13).

## Background References

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3. Komatsu, M. et al. (2010) *Nat Cell Biol* 12, 213-23.
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5. Joung, I. et al. (1996) *Proc Natl Acad Sci USA* 93, 5991-5.
6. Sanchez, P. et al. (1998) *Mol Cell Biol* 18, 3069-80.
7. Puls, A. et al. (1997) *Proc Natl Acad Sci USA* 94, 6191-6.
8. Vadlamudi, R.K. et al. (1996) *J Biol Chem* 271, 20235-7.
9. Wooten, M.W. et al. (2005) *J Biol Chem* 280, 35625-9.
10. Bjørkøy, G. et al. (2005) *J Cell Biol* 171, 603-14.
11. Komatsu, M. et al. (2007) *Cell* 131, 1149-63.
12. Pankiv, S. et al. (2007) *J Biol Chem* 282, 24131-45.
13. Ichimura, Y. et al. (2013) *Mol Cell* 51, 618-31.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**WB:** Western Blotting

## Cross-Reactivity Key

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
**X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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## Limited Uses