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p62/SQSTM1 Antibody (2C11) Summary

Immunogen	SQSTM1 (AAH03139.1, 1 a.a. ~ 440 a.a) full-length recombinant protein with GST tag. MW of the GST tag alone is 26 kDa. MASLTVKAYLLGKEDAAREIRRFSFCCSPEPEAEAEAAAAGPGPC ERLLSRVAALFPALRPGGFQAHYRDEDGDLVAFSSDEELTMAM SYVKDDIFRIYIKEKKECRRDHRPPCAQEAPRNMVHPNVICDG CNGPVGTRYKCSVCPDYDLCSVCEGKGLHRGHTKLAFFSPFG HLSEGFHSRWLRKVKHGHFGWPGWEMGPPGNWSPRPPRA GEARPGPTAESASGPSSEDPVNFNKNVGSVAAAALSPLGIEVDI DVEHGGKRSRLTPVSPSSSTEKSSSQSSCCSDPSKPGGNV EGATQSLAEQMRKIALESEGRPEEQMESDNCSGGDDDWTHLS SKEVDPSTGELQSLQMPSESEGPSSLDPSQEGPTGLKEAALYPH LPPEADPRLIESLSQMLSMGFSDGEGWLTRLLQTKNYDIGAAL DTIQYSKHPPPL
Localization	Cytoplasmic
Isotype	IgG2a Kappa
Clonality	Monoclonal
Host	Mouse
Gene	SQSTM1
Purity	IgG purified
Innovator's Reward	Test in a species/application not listed above to receive a full credit towards a future purchase.

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Applications/Dilutions

Dilutions	Western Blot 1:100-1:2000 ELISA Immunocytochemistry/Immunofluorescence 10ug/mL Immunohistochemistry 1:10-1:500 Immunohistochemistry-Frozen 1:10-1:500 Immunohistochemistry-Paraffin 1:10-1:500 Immunoprecipitation 1:10-1:1000
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Application Notes Use in Immunohistochemistry-paraffin reported in scientific literature (PMID: 23569437).

Theoretical MW 47.7 kDa.
Disclaimer note: The observed molecular weight of the protein may vary from the listed predicted molecular weight due to post translational modifications, post translation cleavages, relative charges, and other experimental factors.

Reviewed Applications Read 8 Reviews rated 4.5  using H00008878-M01 in the following applications:

Western Blot
Immunofluorescence
Immunoprecipitation

Publications Read Publications using H00008878-M01 in the following applications:

IB	1 publication
ICC/IF	12 publications
IHC	4 publications
IHC-Fr	2 publications
IHC-P	3 publications
WB	64 publications

Reactivity Notes

Rat reactivity reported in scientific literature (PMID: 24352657). Human reactivity reported in scientific literature (PMID: 26571504). Rabbit reactivity reported in scientific literature (PMID: 23569437). Please note that this antibody is reactive to Mouse and derived from the same host, Mouse. Mouse-On-Mouse blocking reagent may be needed for IHC and ICC experiments to reduce high background signal. You can find these reagents under catalog numbers PK-2200-NB and MP-2400-NB. Please contact Technical Support if you have any questions.

Packaging, Storage & Formulations

Storage	Aliquot and store at -20C or -80C. Avoid freeze-thaw cycles.
Buffer	In 1x PBS, pH 7.4
Preservative	No Preservative
Purity	IgG purified

Notes

Quality control test: Antibody Reactive Against Recombinant Protein.

This product is produced by and distributed for Abnova, a company based in Taiwan.

Alternate Names for p62/SQSTM1 Antibody (2C11)

- A170
- Autophagy Receptor P62
- DMRV
- EBI3-associated protein of 60 kDa
- EBI3-associated protein p60
- EBIAP
- FTDALS3
- NADGP
- ORCA
- OSIL
- oxidative stress induced like
- p60PDB3
- p62
- p62B
- Paget disease of bone 3
- PDB3
- phosphotyrosine independent ligand for the Lck SH2 domain p62
- Phosphotyrosine-independent ligand for the Lck SH2 domain of 62 kDa
- Sequestosome 1
- sequestosome-1
- SQSTM1
- Ubiquitin-binding protein p62
- ZIP3

Background

p62/SQSTM1 (ubiquitin-binding protein p62/Sequestosome-1) is an intracellular protein (theoretical molecular weight 47.7 kDa) which localizes to the cytoplasm, nucleus, autophagosomes and lysosomes in all tissues (1). Structurally, p62/SQSTM1 consists of multiple domains (e.g., Phox1 and Bem1p-PB1, zinc finger-ZZ, TRAF6 binding domain-TB, Keap1-interacting region-KIR, LC3 interacting region-LIR and ubiquitin-associated domain-UBA) for interaction with various protein targets. Additional domains include nuclear export (NES) and nuclear localization signals (NLS1 and NLS2). p62/SQSTM1 is a multifunctional scaffold protein which forms oligomers with itself or with other proteins through interactions with PB1 domains.

Abnormal function of p62/SQSTM1 is associated with a range of disease states such as neurodegeneration, cancer, and metabolic disorders (2). Mutations in the p62/SQSTM1 sequence have been linked to Paget's disease of the bone, amyotrophic lateral sclerosis, and frontotemporal lobar degeneration. In Parkinson's disease, p62/SQSTM1 has been linked to microglia activation and subsequent neuroinflammation (3). Functionally, p62/SQSTM1 is involved in a broad range of cellular processes such as amino acid sensing by interaction with mTORC1, oxidative stress response through interaction with Keap1, and targeting cargo for autophagy by interacting with ubiquitin labeled proteins (1).

To induce selective autophagy, p62/SQSTM1 forms long oligomers or helical filaments which interact with LC3 and ubiquitin labeled proteins and lead to the initiation of the autophagosome formation (2). p62/SQSTM1 is not only a selective autophagy receptor but also an autophagy substrate, as its engulfed by the autophagosome and degraded by the autophagolysosome. Monitoring LC3 levels is the standard for assessing autophagic flux, however monitoring p62/SQSTM1 levels by Western blot in the presence and absence of autophagy inhibitors (e.g., Chloroquine) is also a common practice (4). Besides its activity as a selective autophagy receptor, p62/SQSTM1 also plays a role as an adaptor in signaling cascades leading to NFkB activation downstream of TNF-R, IL-1 beta R, TrkA and p75NTR. Briefly, for NFkB signaling downstream of the TNF-R activation, p62/SQSTM1 engages RIP1 kinase and PCK lambda/Iota through the ZZ and PB1 domains, respectively (5).

References

1. Katsuragi, Y., Ichimura, Y., & Komatsu, M. (2015). P62/SQSTM1 functions as a signaling hub and an autophagy adaptor. *FEBS Journal*. <https://doi.org/10.1111/febs.13540>
2. Sanchez-Martin, P., & Komatsu, M. (2018). p62/SQSTM1 - Steering the cell through health and disease. *Journal of Cell Science*. <https://doi.org/10.1242/jcs.222836>
3. Yao, L., Zhu, Z., Wu, J., Zhang, Y., Zhang, H., Sun, X.,... Lu, G. (2019). MicroRNA-124 regulates the expression of p62/p38 and promotes autophagy in the inflammatory pathogenesis of Parkinson's disease. *The FASEB Journal*. <https://doi.org/10.1096/fj.201900363r>
4. Klionsky, D. J., Abdelmohsen, K., Abe, A., Abedin, M. J., Abeliovich, H., Arozena, A. A.,... Zughayer, S. M. (2016). Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). *Autophagy*. <https://doi.org/10.1080/15548627.2015.1100356>
5. Bitto, A., Lerner, C. A., Nacarelli, T., Crowe, E., Torres, C., & Sell, C. (2014). p62/SQSTM1 at the interface of aging, autophagy, and disease. *Age*. <https://doi.org/10.1007/s11357-014-9626-3>

Limitations

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.