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KEAP1 Antibody

Catalog # ASC11552

Product Information

Application	WB, IF, E
Primary Accession	Q14145
Other Accession	NP_987096, 45269145
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	69666
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	KEAP1 antibody can be used for detection of KEAP1 by Western blot at 1 - 2 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	9817
Other Names	Kelch-like ECH-associated protein 1, Cytosolic inhibitor of Nrf2, INrf2, Kelch-like protein 19, KEAP1, INRF2, KIAA0132, KLHL19
Target/Specificity	KEAP1; At least two isoforms of KEAP1 are known to exist.
Reconstitution & Storage	KEAP1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	KEAP1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KEAP1 {ECO:0000303|PubMed:14585973, ECO:0000312|HGNC:HGNC:23177}
Function	Substrate-specific adapter of a BCR (BTB-CUL3-RBX1) E3 ubiquitin ligase complex that regulates the response to oxidative stress by targeting NFE2L2/NRF2 for ubiquitination (PubMed:14585973, PubMed:15379550, PubMed:15572695, PubMed:15601839, PubMed:15983046, PubMed:37339955). KEAP1 acts as a key sensor of oxidative and electrophilic stress: in normal conditions, the BCR(KEAP1) complex mediates ubiquitination and degradation of NFE2L2/NRF2, a transcription factor regulating expression of many cytoprotective genes (PubMed:15601839, PubMed:16006525). In response to oxidative stress, different electrophile metabolites trigger

	non-enzymatic covalent modifications of highly reactive cysteine residues in KEAP1, leading to inactivate the ubiquitin ligase activity of the BCR(KEAP1) complex, promoting NFE2L2/NRF2 nuclear accumulation and expression of phase II detoxifying enzymes (PubMed:16006525, PubMed:17127771, PubMed:18251510, PubMed:19489739, PubMed:29590092). In response to selective autophagy, KEAP1 is sequestered in inclusion bodies following its interaction with SQSTM1/p62, leading to inactivation of the BCR(KEAP1) complex and activation of NFE2L2/NRF2 (PubMed:20452972). The BCR(KEAP1) complex also mediates ubiquitination of SQSTM1/p62, increasing SQSTM1/p62 sequestering activity and degradation (PubMed:28380357). The BCR(KEAP1) complex also targets BPTF and PGAM5 for ubiquitination and degradation by the proteasome (PubMed:15379550, PubMed:17046835).
Cellular Location	Cytoplasm. Nucleus. Note=Mainly cytoplasmic (PubMed:15601839). In response to selective autophagy, relocalizes to inclusion bodies following interaction with SQSTM1/p62 (PubMed:20452972).
Tissue Location	Broadly expressed, with highest levels in skeletal muscle.

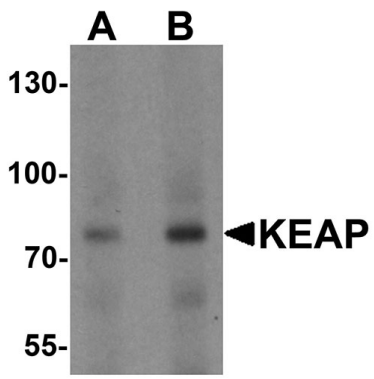
Background

KEAP1 Antibody: KEAP1 (kelch-like ECH-associated protein 1) is a stress sensing adaptor for the Cullin3 (Cul3)-dependent E3 ubiquitin ligase complex that negatively regulates NRF2 (NF-E2-related factor 2) and plays a role in the oxidative stress response. It targets NFE2L2/NRF2 for ubiquitination and degradation by the proteasome. KEAP1 contains an amino terminal BTB/POZ domain and a carboxyl terminal KELCH domain which are required for interaction with NRF2, and in binding Cul3-E3 ubiquitin ligase. Altered expression of NRF2 is associated with chronic obstructive pulmonary disease (COPD). KEAP1 also targets the down regulation of NF-κB activity by targeting IKKβ degradation. Mutation of the KEAP1 gene is found in lung cancer.

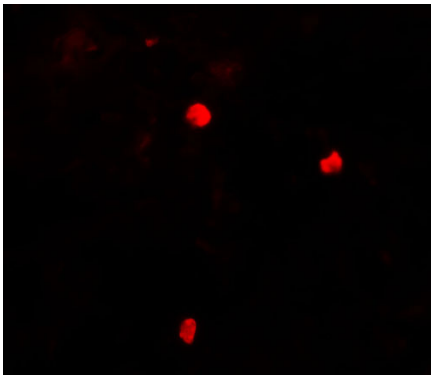
References

Zhang DD, Lo SC, Cross JV, et al. Keap1 is a redox-regulated substrate adaptor protein for a Cul3-dependent ubiquitin ligase complex. Mol. Cell. Biol. 2004;24:10941-53.
Kobayashi A, Kang MI, Okawa H, et al. Oxidative stress sensor Keap1 functions as an adaptor for Cul3-based E3 ligase to regulate proteasomal degradation of Nrf2. Mol. Cell. Biol. 2004; 24:7130-9.
Jiang J, Mo ZC, Yin K, et al. Epigallocatechin-3-gallate prevents TNF-α-induced NF-kappaB activation thereby upregulating ABCA1 via the Nrf2/Keap1 pathway in macrophage foam cells. Int. J. Mol. Med. 2012; 29:946-56.
Devling TW, Lindsay CD, McLellan LI, et al. Utility of siRNA against Keap1 as a strategy to stimulate a cancer chemopreventive phenotype. Proc. Natl. Acad. Sci. USA 2005; 102: 7280-5A.

Images



Western blot analysis of KEAP1 in human lung tissue lysate with KEAP1 antibody at (A) 1 and (B) 2 µg/mL.



Immunofluorescence of KEAP1 in human lung tissue with KEAP1 antibody at 20 µg/mL.