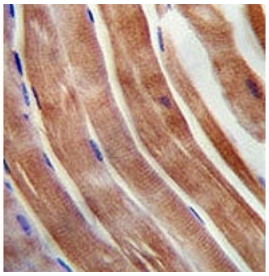
KEAP1 Rabbit Polyclonal Antibody / NRF2 Regulatory Protein Antibody (F40464)

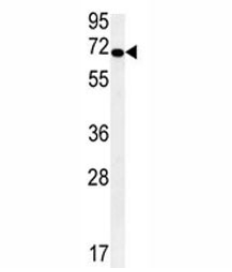
Catalog No.	Formulation	Size
F40464-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F40464-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Species Reactivity	Human
Predicted Reactivity	Pig
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	Q14145
RRID	AB_3759654
Applications	Western blot: 1:1000 IHC (Paraffin): 1:50-1:100
Limitations	This KEAP1 Rabbit Polyclonal Antibody / NRF2 Regulatory Protein Antibody is available for research use only.



KEAP1 Rabbit Polyclonal Antibody IHC Analysis of Human Skeletal Muscle. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human skeletal muscle tissue using NRF2 Regulatory Protein Antibody. Brown DAB immunoreactivity is observed within longitudinally oriented skeletal muscle fibers, with hematoxylin counterstaining highlighting cell nuclei.



KEAP1 Rabbit Polyclonal Antibody WB Analysis of Human HepG2 Cells. Western blot analysis of human HepG2 cell lysate using NRF2 Regulatory Protein Antibody. An immunoreactive band is detected at approximately 70 kDa, consistent with the predicted molecular weight of KEAP1.

Description

KEAP1 Rabbit Polyclonal Antibody / NRF2 Regulatory Protein Antibody targets Kelch-like ECH-associated protein 1 (KEAP1), a cytoplasmic regulatory protein encoded by the KEAP1 gene. KEAP1 plays a central role in maintaining cellular redox homeostasis by controlling the stability and activity of NRF2, a transcription factor responsible for coordinating antioxidant defense, detoxification, and metabolic adaptation. Through its interactions with NRF2 and the ubiquitin-proteasome system, KEAP1 helps regulate cellular responses to oxidative and electrophilic stress.

KEAP1 functions as a substrate recognition component of the CUL3-RBX1 E3 ubiquitin ligase complex. Under basal conditions, KEAP1 binds NRF2 and facilitates its ubiquitination and proteasomal degradation, maintaining relatively low NRF2 activity. During oxidative or electrophilic stress, chemical modifications of reactive cysteine residues within KEAP1 interfere with efficient NRF2 ubiquitination. Newly synthesized NRF2 subsequently accumulates, translocates to the nucleus, and activates genes containing antioxidant response elements (AREs).

The structural organization of KEAP1 is essential to its regulatory functions. Its N-terminal BTB domain mediates homodimerization and interaction with CUL3, while the C-terminal Kelch repeat domain recognizes specific motifs within NRF2. The intervening region contains regulatory cysteine residues that contribute to stress sensing. This arrangement allows KEAP1 to integrate changes in cellular redox conditions with the activity of transcriptional defense programs.

NRF2-dependent gene expression regulates glutathione synthesis, xenobiotic metabolism, NADPH production, and protection against reactive oxygen species. KEAP1 also participates in additional protein regulatory pathways, including interactions involving PGAM5 and other cellular proteins. These functions connect KEAP1 to mitochondrial regulation, protein quality control, and broader mechanisms of cellular stress adaptation.

Disruption of KEAP1 function can produce persistent NRF2 activation, with important consequences for cellular metabolism and survival. KEAP1 mutations and altered expression have been documented in several malignancies, where sustained NRF2 signaling may support tumor progression and resistance to therapeutic stress. Conversely, appropriate NRF2 activation contributes to protection against oxidative injury in normal tissues. KEAP1 Rabbit Polyclonal Antibody is relevant to investigations of redox regulation, ubiquitin-dependent protein turnover, NRF2 signaling, and the molecular mechanisms underlying cellular responses to environmental and metabolic stress.

For an additional reagent targeting this important regulator of NRF2 signaling and cellular antioxidant responses, see our KEAP1 Antibody, with experimental data from western blot, immunofluorescence, and flow cytometry analysis.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the KEAP1 Rabbit Polyclonal Antibody / NRF2 Regulatory Protein Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 422-449 from the human protein was used as the immunogen for this KEAP1 antibody.

Storage

Store at 4oC for up to one month. For long term, aliquot the KEAP1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Kelch-like ECH-associated protein 1 antibody, Kelch-like protein 19 antibody, KLHL19 antibody, INrf2 antibody, Cytosolic inhibitor of Nrf2 antibody

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