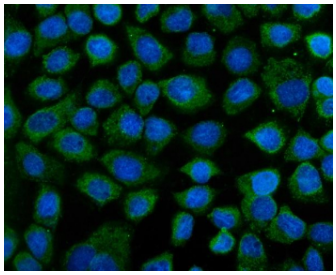
# KEAP1 Antibody / Kelch-Like ECH-Associated Protein 1 Antibody (FY12106)

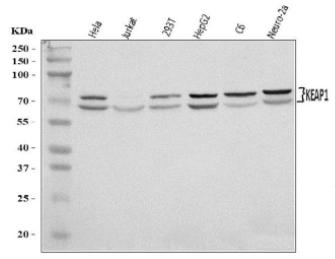
| Catalog No. | Formulation | Size |
|---|---|---|
| FY12106 | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

**Bulk quote request**

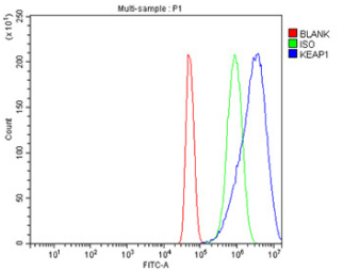
| | |
|---|---|
| **Species Reactivity** | Human, Mouse, Rat |
| **Format** | Lyophilized |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit IgG |
| **Purity** | Immunogen affinity purified |
| **Buffer** | Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4. |
| **UniProt** | Q14145 |
| **Applications** | Western Blot: 0.25-0.5ug/ml<br>Immunocytochemistry: 5ug/ml<br>Immunofluorescence: 5ug/ml<br>Flow cytometry: 1-3ug/million cells<br>ELISA: 0.1-0.5ug/ml |
| **Limitations** | This KEAP1 Antibody / Kelch-Like ECH-Associated Protein 1 Antibody is available for research use only. |



KEAP1 Antibody IF Analysis of Cultured Cells. Immunofluorescence analysis of cultured cells using Kelch-Like ECH-Associated Protein 1 Antibody. Green fluorescence is distributed predominantly throughout the cytoplasm, consistent with the established cytoplasmic localization of KEAP1. Cell nuclei are counterstained with DAPI (blue). Enzymatic antigen retrieval was performed for 15 minutes, followed by blocking with 10% goat serum. The primary antibody was used at 5 ug/ml overnight at 4oC, and DyLight 488-conjugated goat anti-rabbit IgG served as the secondary antibody.




KEAP1 Antibody WB Analysis of Human HeLa, Jurkat, 293T, HepG2, Rat C6 and Mouse Neuro-2a Cells. Western blot analysis of human HeLa (lane 1), Jurkat (lane 2), 293T (lane 3), and HepG2 (lane 4) cell lysates, rat C6 cell lysate (lane 5), and mouse Neuro-2a cell lysate (lane 6) using Kelch-Like ECH-Associated Protein 1 Antibody. Immunoreactive bands are detected at approximately 70 kDa, consistent with the expected molecular weight of KEAP1. The primary antibody was used at 0.5 ug/ml.




KEAP1 Antibody FACS Staining of Fixed and Permeabilized Human U251 Cells. Flow cytometry analysis of fixed and permeabilized human U251 cells using Kelch-Like ECH-Associated Protein 1 Antibody. Cells were fixed with 4% paraformaldehyde, permeabilized, and blocked with 10% normal goat serum before incubation with the primary antibody at 1 ug per million cells. The histogram compares unlabeled cells (red), rabbit IgG isotype control (green), and KEAP1 antibody-stained cells (blue). The antibody-stained population exhibits a clear rightward fluorescence shift relative to the isotype control, demonstrating increased antibody-associated fluorescence.

## Description

KEAP1 Antibody / Kelch-Like ECH-Associated Protein 1 Antibody targets KEAP1, a cytoplasmic regulatory protein encoded by the KEAP1 gene. KEAP1 is a central component of the cellular antioxidant defense system and functions as a substrate adaptor for the Cullin 3 (CUL3)-based E3 ubiquitin ligase complex. Its principal regulatory target is NRF2, a transcription factor that coordinates the expression of genes involved in antioxidant protection, detoxification, metabolic adaptation, and maintenance of cellular redox balance.

Under normal conditions, KEAP1 binds NRF2 and promotes its ubiquitination and subsequent degradation by the 26S proteasome. This continuous turnover maintains relatively low NRF2 activity in unstressed cells. During oxidative or electrophilic stress, modifications of reactive cysteine residues within KEAP1 alter its ability to support NRF2 ubiquitination. Newly synthesized NRF2 can then accumulate, enter the nucleus, and activate transcription through antioxidant response elements (AREs) in the regulatory regions of target genes.

KEAP1 contains several functional domains essential for its regulatory activity. The N-terminal BTB domain mediates homodimerization and interactions with CUL3, while the C-terminal Kelch repeat domain recognizes specific binding motifs within NRF2. An intervening region contains several redox-sensitive cysteine residues that contribute to the detection of oxidative and electrophilic stress. These structural features allow KEAP1 to function as a molecular sensor connecting changes in cellular redox conditions to transcriptional responses.

The KEAP1-NRF2 signaling pathway regulates numerous protective proteins, including enzymes involved in glutathione metabolism, xenobiotic detoxification, and NADPH regeneration. Its activity also influences mitochondrial function, iron homeostasis, inflammation, and cellular responses to metabolic stress. Persistent NRF2 activation can be beneficial during acute oxidative injury but may contribute to pathological adaptation when regulatory control is disrupted.

Alterations in KEAP1 expression, mutation, or epigenetic regulation have been identified in several cancers, particularly lung cancer. Loss of KEAP1 function can produce sustained NRF2 activation, promoting metabolic reprogramming, tumor cell survival, and resistance to certain anticancer treatments. Dysregulation of this pathway has also been investigated in cardiovascular, neurodegenerative, and inflammatory disorders. KEAP1 Antibody is relevant to studies examining redox sensing, NRF2-dependent transcriptional regulation, protein ubiquitination, and the molecular mechanisms governing cellular adaptation to oxidative stress.

Explore our Cell Biology Antibodies for additional targets involved in oxidative stress responses, protein ubiquitination, intracellular signaling, and cellular homeostasis.

## Application Notes

Optimal dilution of the KEAP1 Antibody / Kelch-Like ECH-Associated Protein 1 Antibody should be determined by the researcher.

## Immunogen

E.coli-derived human KEAP1 recombinant protein (Position: K84-K312) was used as the immunogen for the KEAP1 antibody.

## Storage

After reconstitution, the KEAP1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

## Alternate Names

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