SANTA CRUZ BIOTECHNOLOGY, INC.

Keap1 (G-2): sc-365626

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Keap1 (Kelch-like ECH-associated protein 1, INrf2, KLHL19) is a stress sensing adaptor for the Cullin3 (Cul3)-dependent E3 ubiquitin ligase complex that negatively regulates Nrf2 (NF-E2-related factor 2). Steady state levels of proteins are under the influence of the ubiquitin pathway, which consists of ubiquitin activation (E1), conjugation (E2) and ligation (E3). Keap1 assembles into an E3 ubiquitin ligase complex with Cul3 and Rbx1 and targets lysine residues in the N-terminal Neh2 domain of Nrf2 for ubiquitin conjugation. The Keap1-Nrf2 system mediates cytoprotective gene expression in response to oxidative and/or electrophilic stresses. Keap1 constitutively suppresses Nrf2 activity under unstressed conditions, oxidants or electrophiles provoke the repression of Keap1 activity, inducing Nrf2 activation. Cys 273 and Cys 288 residues of Keap1 are required for suppressing Nrf2 nuclear accumulation. Keap1 sequesters Nrf2 in the cytoplasm through an active Crm1/exportin-dependent nuclear export mechanism.

CHROMOSOMAL LOCATION

Genetic locus: KEAP1 (human) mapping to 19p13.2.

SOURCE

Keap1 (G-2) is a mouse monoclonal antibody raised against amino acids 181-370 mapping within an internal region of Keap1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Keap1 (G-2) is available conjugated to agarose (sc-365626 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365626 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365626 PE), fluorescein (sc-365626 FITC), Alexa Fluor® 488 (sc-365626 AF488), Alexa Fluor® 546 (sc-365626 AF546), Alexa Fluor® 594 (sc-365626 AF594) or Alexa Fluor® 647 (sc-365626 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365626 AF680) or Alexa Fluor® 790 (sc-365626 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Keap1 (G-2) is recommended for detection of Keap1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Keap1 siRNA (h): sc-43878, Keap1 shRNA Plasmid (h): sc-43878-SH and Keap1 shRNA (h) Lentiviral Particles: sc-43878-V.

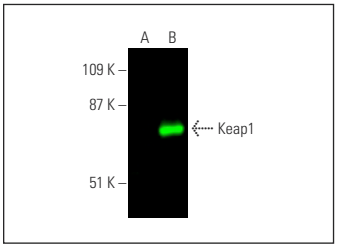
Molecular Weight of Keap1: 69 kDa.

Positive Controls: Keap1 (h): 293T Lysate: sc-171655, Hep G2 cell lysate: sc-2227 or A-673 cell lysate: sc-2414.

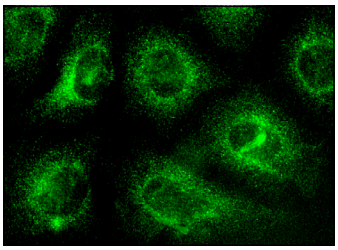
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Keap1 (G-2): sc-365626. Near-infrared western blot analysis of Keap1 expression in non-transfected: sc-117752 (**A**) and human Keap1 transfected: sc-171655 (**B**) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



Keap1 (G-2): sc-365626. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Mishra, M., et al. 2014. Epigenetic modifications of Keap1 regulate its interaction with the protective factor Nrf2 in the development of diabetic retinopathy. Invest. Ophthalmol. Vis. Sci. 55: 7256-7265.
2. Sajja, R.K., et al. 2015. Altered Nrf2 signaling mediates hypoglycemia-induced blood-brain barrier endothelial dysfunction *in vitro*. PLoS ONE 10: e0122358.
3. Dell'Orco, M., et al. 2016. Hydrogen peroxide-mediated induction of SOD1 gene transcription is independent from Nrf2 in a cellular model of neurodegeneration. Biochim. Biophys. Acta 1859: 315-323.
4. Yang, Y., et al. 2017. Synergistic anti-tumor activity of nimotuzumab in combination with trastuzumab in HER2-positive breast cancer. Biochem. Biophys. Res. Commun. 489: 523-527.
5. Tamberg, N., et al. 2018. Keap1-MCM3 interaction is a potential coordinator of molecular machineries of antioxidant response and genomic DNA replication in metazoa. Sci. Rep. 8: 12136.
6. Fujiki, K., et al. 2019. Blockade of ALK4/5 signaling suppresses cadmium- and erastin-induced cell death in renal proximal tubular epithelial cells via distinct signaling mechanisms. Cell Death Differ. 26: 2371-2385.
7. Wei, S., et al. 2019. Role of human Keap1 S53 and S293 residues in modulating the binding of Keap1 to Nrf2. Biochimie 158: 73-81.
8. Fan, H.Y., et al. 2020. Curcumin, as a pleiotropic agent, improves doxorubicin-induced nephrotic syndrome in rats. J. Ethnopharmacol. 250: 112502.
9. Lei, G., et al. 2020. The role of ferroptosis in ionizing radiation-induced cell death and tumor suppression. Cell Res. 30: 146-162.

RESEARCH USE

For research use only, not for use in diagnostic procedures.