SANTA CRUZ BIOTECHNOLOGY, INC.

IRE1α (B-12): sc-390960

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The accumulation of unfolded proteins within the endoplasmic recticulum (ER) of yeast and mammalian cells activates the unfolded protein response (UPR) pathway and leads to the transcription of ER-specific genes involved in protein folding. The activation of the UPR requires the ER transmembrane kinase IRE1p (for inositol-requiring and ER-to-nucleus signaling protein). IRE1α and IRE1β are two mammalian homologs of the yeast IRE1p. These related proteins localize to the ER lumen and contain both a short transmembrane domain that spans the ER membrane and a cytosolic Ser/Thr kinase domain. IRE1 activation involves the oligomerization and *trans*-phosphorylation of the cytosolic portion of the proteins, which then potentiates its intrinsic kinase activity and, in turn, stimulates transcription of UPR-targeted genes. In response to stress, sensors for the ER mammalian cells activate IRE1α and IRE1β, which then results in the phosphorylation of JNK (Jun N-terminal kinase) and the activation of the cellular MAP kinase pathway.

CHROMOSOMAL LOCATION

Genetic locus: ERN1 (human) mapping to 17q23.3; Ern1 (mouse) mapping to 11 E1.

SOURCE

IRE1α (B-12) is a mouse monoclonal antibody raised against amino acids 371-560 of IRE1α of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IRE1α (B-12) is available conjugated to agarose (sc-390960 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390960 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390960 PE), fluorescein (sc-390960 FITC), Alexa Fluor® 488 (sc-390960 AF488), Alexa Fluor® 546 (sc-390960 AF546), Alexa Fluor® 594 (sc-390960 AF594) or Alexa Fluor® 647 (sc-390960 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390960 AF680) or Alexa Fluor® 790 (sc-390960 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

IRE1α (B-12) is recommended for detection of IRE1α of mouse, rat and 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).

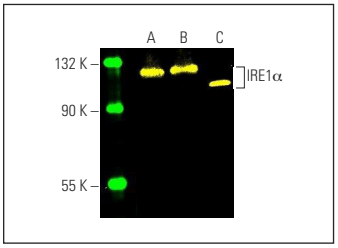
Suitable for use as control antibody for IRE1α siRNA (h): sc-40705, IRE1α siRNA (m): sc-40706, IRE1α siRNA (r): sc-270028, IRE1α shRNA Plasmid (h): sc-40705-SH, IRE1α shRNA Plasmid (m): sc-40706-SH, IRE1α shRNA Plasmid (r): sc-270028-SH, IRE1α shRNA (h) Lentiviral Particles: sc-40705-V, IRE1α shRNA (m) Lentiviral Particles: sc-40706-V and IRE1α shRNA (r) Lentiviral Particles: sc-270028-V.

Molecular Weight of IRE1α: 120 kDa.

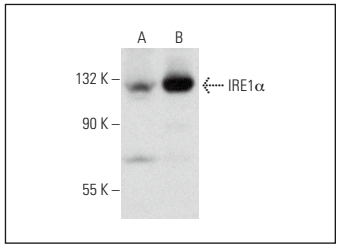
STORAGE

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

DATA



IRE1α (B-12) Alexa Fluor® 488: sc-390960 AF488. Direct fluorescent western blot analysis of IRE1α expression in KNRK (**A**), C2C12 (**B**) and HeLa (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 680: sc-516730.



IRE1α (B-12): sc-390960. Western blot analysis of IRE1α expression in C2C12 (**A**) and KNRK (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Mu, J.S., et al. 2015. Rg1 exhibits neuroprotective effects by inhibiting the endoplasmic reticulum stress-mediated c-Jun N-terminal protein kinase apoptotic pathway in a rat model of Alzheimer's disease. Mol. Med. Rep. 12: 3862-3868.
2. Granato, M., et al. 2017. Metformin triggers apoptosis in PEL cells and alters bortezomib-induced unfolded protein response increasing its cytotoxicity and inhibiting KSHV lytic cycle activation. Cell. Signal. 40: 239-247.
3. Yao, W., et al. 2018. IRE1α siRNA relieves endoplasmic reticulum stress-induced apoptosis and alleviates diabetic peripheral neuropathy *in vivo* and *in vitro*. Sci. Rep. 8: 2579.
4. Ojha, C.R., et al. 2019. Toll-like receptor 3 regulates Zika virus infection and associated host inflammatory response in primary human astrocytes. PLoS ONE 14: e0208543.
5. Wang, D., et al. 2019. Proteasome inhibition boosts autophagic degradation of ubiquitinated-AGR2 and enhances the antitumor efficiency of bevacizumab. Oncogene 38: 3458-3474.
6. Sicari, D., et al. 2020. A guide to assessing endoplasmic reticulum homeostasis and stress in mammalian systems. FEBS J. 287: 27-42.
7. Liang, S., et al. 2020. BAG2 ameliorates endoplasmic reticulum stress-induced cell apoptosis in *Mycobacterium tuberculosis*-infected macrophages through selective autophagy. Autophagy 16: 1453-1467.
8. Ettcheto, M., et al. 2020. Epigallocatechin-3-gallate (EGCG) improves cognitive deficits aggravated by an obesogenic diet through modulation of unfolded protein response in APPswe/PS1dE9 mice. Mol. Neurobiol. 57: 1814-1827.

RESEARCH USE

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