SANTA CRUZ BIOTECHNOLOGY, INC.

IRE1α (C-17): sc-10510

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 transphosphorylation 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 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of IRE1α of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10510 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

IRE1α (C-17) is recommended for detection of IRE1α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

IRE1α (C-17) is also recommended for detection of IRE1α in additional species, including equine, canine, bovine and porcine.

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.

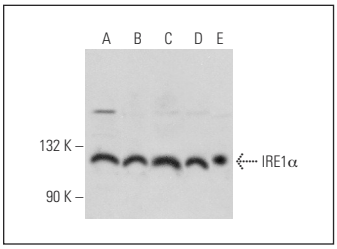
Molecular Weight of IRE1α: 120 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or ZR-75-1 cell lysate: sc-2241.

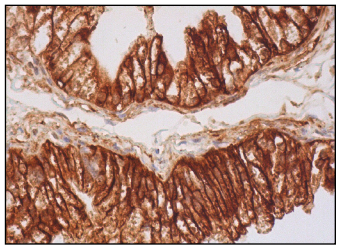
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



IRE1α (C-17): sc-10510. Western blot analysis of IRE1α expression in MCF7 (**A**), HeLa (**B**), Jurkat (**C**), Raji (**D**) and ZR-75-1 (**E**) whole cell lysates.



IRE1α (C-17): sc-10510. Immunoperoxidase staining of formalin fixed, paraffin-embedded human epididymis tissue showing cytoplasmic, membrane and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Xu, Q., et al. 2007. Selective progesterone receptor modulator asoprisnil induces endoplasmic reticulum stress in cultured human uterine leiomyoma cells. Am. J. Physiol. Endocrinol. Metab. 293: E1002-E1011.
2. Civelek, M., et al. 2009. Chronic endoplasmic reticulum stress activates unfolded protein response in arterial endothelium in regions of susceptibility to atherosclerosis. Circ. Res. 105: 453-461.
3. de Ridder, G., et al. 2011. Modulation of the unfolded protein response by GRP78 in prostate cancer. Methods Enzymol. 489: 245-257.

STORAGE

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

RESEARCH USE

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