SANTA CRUZ BIOTECHNOLOGY, INC.

IRP-2 (4G11): sc-33680

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Iron metabolism is essential for sustaining mammalian homeostasis. Iron uptake and distribution is a highly regulated process in mammalian cells that is monitored by two iron sensing proteins: IRP-1 and -2 (iron regulatory protein-1 and -2), also known as iron responsive element-binding protein-1 and -2 (IRE-BP-1 and -2) or aconitase 1 and 2. IRP-1 and IRP-2 are important soluble regulatory factors that mediate iron uptake and storage in mammalian cells. They are capable of either repressing translation or enhancing mRNA stability by associating with stem-loop motifs known as iron-responsive elements (IREs). IRPs respond to stress mediators, iron concentration and signaling factors, including nitrogen monoxide, cytokines and hydrogen peroxide.

CHROMOSOMAL LOCATION

Genetic locus: IREB2 (human) mapping to 15q25.1; Ireb2 (mouse) mapping to 9 B.

SOURCE

IRP-2 (4G11) is a mouse monoclonal antibody raised against amino acids 138-200 of recombinant IRP-2 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.

IRP-2 (4G11) is available conjugated to agarose (sc-33680 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33680 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33680 PE), fluorescein (sc-33680 FITC), Alexa Fluor® 488 (sc-33680 AF488), Alexa Fluor® 546 (sc-33680 AF546), Alexa Fluor® 594 (sc-33680 AF594) or Alexa Fluor® 647 (sc-33680 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33680 AF680) or Alexa Fluor® 790 (sc-33680 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

IRP-2 (4G11) is recommended for detection of IRP-2 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for IRP-2 siRNA (h): sc-40715, IRP-2 siRNA (m): sc-40716, IRP-2 shRNA Plasmid (h): sc-40715-SH, IRP-2 shRNA Plasmid (m): sc-40716-SH, IRP-2 shRNA (h) Lentiviral Particles: sc-40715-V and IRP-2 shRNA (m) Lentiviral Particles: sc-40716-V.

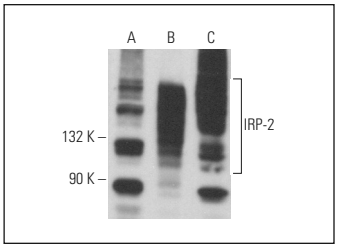
Molecular Weight of IRP-2: 105 kDa.

Positive Controls: F9 cell lysate: sc-2245, HL-60 whole cell lysate: sc-2209 or K-562 whole cell lysate: sc-2203.

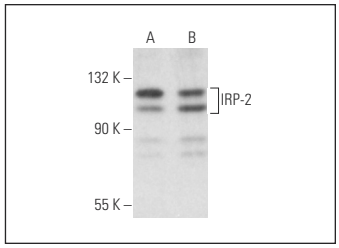
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



IRP-2 (4G11): sc-33680. Western blot analysis of IRP-2 expression in F9 (**A**), Sol8 (**B**) and A-10 (**C**) whole cell lysates.



IRP-2 (4G11): sc-33680. Western blot analysis of IRP-2 expression in HL-60 (**A**) and K-562 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Stehling, O., et al. 2013. Human CIA2A-FAM96A and CIA2B-FAM96B integrate iron homeostasis and maturation of different subsets of cytosolic-nuclear iron-sulfur proteins. Cell Metab. 18: 187-198.
2. Rogers, J.T., et al. 2016. A role for amyloid precursor protein translation to restore iron homeostasis and ameliorate lead (Pb) neurotoxicity. J. Neurochem. 138: 479-494.
3. Pourcelot, E., et al. 2018. The iron regulatory proteins are defective in repressing translation via exogenous 5' iron responsive elements despite their relative abundance in leukemic cellular models. Metallomics 10: 639-649.
4. Chen, X., et al. 2020. Relieving ferroptosis may partially reverse neurodegeneration of the auditory cortex. FEBS J. 287: 4747-4766.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.