SANTA CRUZ BIOTECHNOLOGY, INC.

# IRP-2 (V-21): sc-14221

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 iron regulatory protein-1 and -2 (IRP-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.

## REFERENCES


1. Rouault, T.A., et al. 1990. Cloning of the cDNA encoding an RNA regulatory protein—the human iron-responsive element-binding protein. Proc. Natl. Acad. Sci. USA 87: 7958-7962.
2. Hentze, M.W., et al. 1991. Homology between IRE-BP, a regulatory RNA-binding protein, aconitase, and isopropylmalate isomerase. Nucleic Acids Res. 19: 1739-1740.
3. Kaptain, S., et al. 1991. A regulated RNA binding protein also possesses aconitase activity. Proc. Natl. Acad. Sci. USA 88: 10109-10113.
4. Hirling, H., et al. 1992. Expression of active iron regulatory factor from a full-length human cDNA by *in vitro* transcription/translation. Nucleic Acids Res. 20: 33-39.
5. Rouault, T.A., et al. 1996. The impact of oxidative stress on eukaryotic iron metabolism. EXS 77: 183-197.
6. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 100880. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/


## CHROMOSOMAL LOCATION

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

## SOURCE

IRP-2 (V-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of IRP-2 (iron regulatory protein-2) 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-14221 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

IRP-2 (V-21) 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), 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); non cross-reactive with IRP-1.

IRP-2 (V-21) is also recommended for detection of IRP-2 in additional species, including equine, canine, bovine, porcine and avian.

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: Jurkat whole cell lysate: sc-2204.

## 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) 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.

## SELECT PRODUCT CITATIONS


1. Irace, C., et al. 2005. Divergent modulation of iron regulatory proteins and ferritin biosynthesis by hypoxia/reoxygenation in neurones and glial cells. J. Neurochem. 95: 1321-1331.
2. Dang, Y., et al. 2006. Eukaryotic initiation factor 2$\alpha$-independent pathway of stress granule induction by the natural product pateamine A. J. Biol. Chem. 281: 32870-32878.
3. Fan, Y., et al. 2009. Ferritin expression in rat hepatocytes and kupffer cells after lead nitrate treatment. Toxicol. Pathol. 37: 209-217.


## RESEARCH USE

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

## PROTOCOLS

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