SANTA CRUZ BIOTECHNOLOGY, INC.

CALR3 (1H2): sc-134295

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the calreticulin (CRT) family are calcium-binding chaperones that are localized to the endoplasmic reticulum or sarcoplasmic reticulum in eukaryotes. Plant CRTs seem to have different properties than their animal counterparts and may be significant during growth and development, as well as biotic and abiotic stress responses. Calreticulin-3, also called CRT2 (calreticulin-2), is a 384 amino acid endoplasmic reticular (ER) protein that contains 2 calcium binding domains, a P-domain and a C-domain. Calreticulin-3 assists in the calreticulin/calnexin cycle, where it is involved in protein-folding, oligomeric assembly and quality control in the ER. With specific expression in testis, CALR3 has been implicated as a cancer-testis antigen due to its frequent expression in various cancers.

REFERENCES

1. Michalak, M., et al. 1998. Calreticulin, a multifunctional Ca^{2+} binding chaperone of the endoplasmic reticulum. Biochem. Cell Biol. 76: 779-785.
2. Michalak, M., et al. 1999. Calreticulin: one protein, one gene, many functions. Biochem. J. 344: 281-292.
3. Corbett, E.F., et al. 2000. The conformation of calreticulin is influenced by the endoplasmic reticulum luminal environment. J. Biol. Chem. 275: 27177-27185.
4. Persson, S., et al. 2002. Identification of a novel calreticulin isoform (CRT2) in human and mouse. Gene 297: 151-158.
5. Persson, S., et al. 2003. Phylogenetic analyses and expression studies reveal two distinct groups of calreticulin isoforms in higher plants. Plant Physiol. 133: 1385-1396.
6. Hayashi, E., et al. 2007. Identification of a novel cancer-testis antigen CRT2 frequently expressed in various cancers using representational differential analysis. Clin. Cancer Res. 13: 6267-6274.
7. Chiu, C., et al. 2007. Genetic screening of calcium regulation genes in familial hypertrophic cardiomyopathy. J. Mol. Cell. Cardiol. 43: 337-343.
8. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611414. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
9. Jia, X.Y., et al. 2009. Calreticulin: conserved protein and diverse functions in plants. Physiol. Plant. 136: 127-138.

CHROMOSOMAL LOCATION

Genetic locus: CALR3 (human) mapping to 19p13.11.

SOURCE

CALR3 (1H2) is a mouse monoclonal antibody raised against recombinant CALR3 protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CALR3 (1H2) is recommended for detection of CALR3 of 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CALR3 siRNA (h): sc-97334, CALR3 shRNA Plasmid (h): sc-97334-SH and CALR3 shRNA (h) Lentiviral Particles: sc-97334-V.

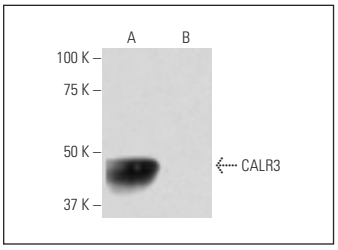
Molecular Weight of CALR3: 45 kDa.

Positive Controls: human testis extract: sc-363781 or human CALR3 transfected 293T whole cell lysate.

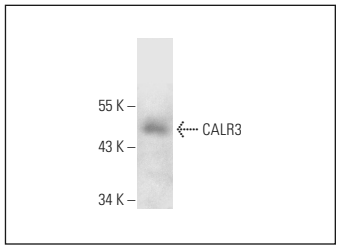
RECOMMENDED SUPPORT REAGENTS

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).

DATA



CALR3 (1H2): sc-134295. Western blot analysis of CALR3 expression in human CALR3 transfected (**A**) and non-transfected (**B**) 293T whole cell lysates.



CALR3 (1H2): sc-134295. Western blot analysis of CALR3 expression in human testis tissue extract.

SELECT PRODUCT CITATIONS

1. Lu, Y.W., et al. 2016. Defining functional classes of Barth syndrome mutation in humans. Hum. Mol. Genet. 25: 1754-1770.
2. Guillory, B., et al. 2018. Ghrelin deletion protects against age-associated hepatic steatosis by downregulating the C/EBPα-p300/DGAT1 pathway. Aging Cell 17: e12688.

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.