SANTA CRUZ BIOTECHNOLOGY, INC.

Calnexin (3H4A7): sc-130059

BACKGROUND

Calnexin and Calregulin (also called calreticulin) are calcium-binding proteins that are localized to the endoplasmic reticulum, Calnexin to the membrane and Calregulin to the lumen. Calnexin is a type I membrane protein that interacts with newly synthesized glycoproteins in the endoplasmic reticulum. It may play a role in assisting with protein assembly and in retaining unassembled protein subunits in the endoplasmic reticulum. Calregulin has both low- and high-affinity calcium-binding sites. Neither Calnexin nor Calregulin contains the calcium-binding "E-F hand" motif found in calmodulins. Calnexin and Calregulin are important for the maturation of glycoproteins in the endoplasmic reticulum and appear to bind many of the same proteins.

REFERENCES

1. Smith, M.J. and Koch, G.L. 1989. Multiple zones in the sequence of calreticulin (CRP55, Calregulin, HACBP), a major calcium-binding ER/SR protein. EMBO J. 8: 3581-3586.
2. David, V., et al. 1993. Interaction with newly synthesized and retained proteins in the endoplasmic reticulum suggests a chaperone function for human integral membrane protein IP90 (Calnexin). J. Biol. Chem. 268: 9585-9592.
3. Tjoelker, L.W., et al. 1994. Human, mouse and rat Calnexin cDNA cloning: identification of potential calcium-binding motifs and gene localization to human chromosome 5. Biochemistry 33: 3229-3236.

CHROMOSOMAL LOCATION

Genetic locus: CANX (human) mapping to 5q35.3.

SOURCE

Calnexin (3H4A7) is a mouse monoclonal antibody raised against a Calnexin peptide of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Calnexin (3H4A7) is recommended for detection of Calnexin 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 Calnexin siRNA (h): sc-29233, Calnexin shRNA Plasmid (h): sc-29233-SH and Calnexin shRNA (h) Lentiviral Particles: sc-29233-V.

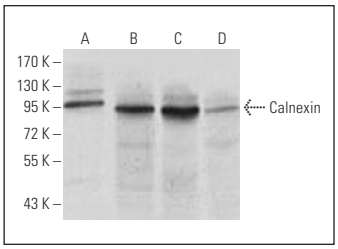
Molecular Weight of Calnexin: 90 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or MCF7 whole cell lysate: sc-2206.

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



Calnexin (3H4A7): sc-130059. Western blot analysis of Calnexin expression in A-431 (**A**), HeLa (**B**), MCF7 (**C**) and A549 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Esmail, S., et al. 2016. N-linked glycosylation is required for vacuolar H^+-ATPase (V-ATPase) α4 subunit stability, assembly, and cell surface expression. J. Cell. Biochem. 117: 2757-2768.
2. Esmail, S., et al. 2017. N-linked glycosylation of α subunit isoforms is critical for vertebrate vacuolar H^+-ATPase (V-ATPase) biosynthesis. J. Cell. Biochem. 119: 861-875.
3. Esmail, S., et al. 2018. Molecular mechanisms of cutis laxa- and distal renal tubular acidosis-causing mutations in V-ATPase α subunits, ATP6V0A2 and ATP6V0A4. J. Biol. Chem. 293: 2787-2800.
4. Hayat, B., et al. 2019. Altered unfolded protein response and proteasome impairment in pseudoexfoliation pathogenesis. Exp. Eye Res. 181: 197-207.

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.

PROTOCOLS

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

CONJUGATES

See **Calnexin (AF18): sc-23954** for Calnexin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.