SANTA CRUZ BIOTECHNOLOGY, INC.

Grancalcin (Q-7): sc-100934

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Grancalcin is a calcium-binding protein that is especially abundant in human neutrophils. Grancalcin belongs to the penta EF-hand (PEF) subfamily of EF-hand proteins, which also comprises calpain, sorcin, peflin and ALG-2. Grancalcin forms a homodimer through the association of the unpaired EF5 hands. Grancalcin undergoes important conformational changes upon binding of calcium, which subsequently exposes hydrophobic amino acid residues to direct the protein to hydrophobic surfaces. Grancalcin interacts with L-plastin, a protein known to have Actin bundling activity, which suggests that Grancalcin may play a role in the regulation of neutrophil adhesion. Grancalcin is specifically associated with cells originating in the bone marrow, and it is particularly abundant in neutrophils and monocytes, with relatively small amounts detected in lymphocytes.

REFERENCES

1. Teahan, C.G., Totty, N.F. and Segal, A.W. 1992. Isolation and characterization of Grancalcin, a novel 28 kDa EF-hand calcium-binding protein from human neutrophils. Biochem. J. 286: 549-554.
2. Boyhan, A., Casimir, C.M., French, J.K., Teahan, C.G. and Segal, A.W. 1992. Molecular cloning and characterization of Grancalcin, a novel EF-hand calcium-binding protein abundant in neutrophils and monocytes. J. Biol. Chem. 267: 2928-2933.
3. Lollike, K., Sorensen, O., Bundgaard, J.R., Segal, A.W., Boyhan, A. and Borregaard, N. 1995. An ELISA for Grancalcin, a novel cytosolic calcium-binding protein present in leukocytes. J. Immunol. Methods 185: 1-8.
4. Jia, J., Han, Q., Borregaard, N., Lollike, K. and Cygler, M. 2000. Crystal structure of human Grancalcin, a member of the penta-EF-hand protein family. J. Mol. Biol. 300: 1271-1281.
5. Lollike, K., Johnsen, A.H., Durussel, I., Borregaard, N. and Cox, J.A. 2001. Biochemical characterization of the penta-EF-hand protein Grancalcin, and identification of L-plastin as a binding partner. J. Biol. Chem. 276: 17762-17769.

CHROMOSOMAL LOCATION

Genetic locus: GCA (human) mapping to 2q24.2.

SOURCE

Grancalcin (Q-7) is a mouse monoclonal antibody raised against recombinant Grancalcin of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Grancalcin (Q-7) is recommended for detection of Grancalcin 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)], 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).

Suitable for use as control antibody for Grancalcin siRNA (h): sc-43349, Grancalcin shRNA Plasmid (h): sc-43349-SH and Grancalcin shRNA (h) Lentiviral Particles: sc-43349-V.

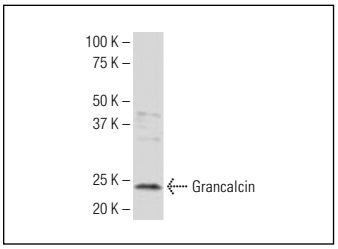
Molecular Weight of Grancalcin: 28 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, THP-1 cell lysate: sc-2238 or MCF7 whole cell lysate: sc-2206.

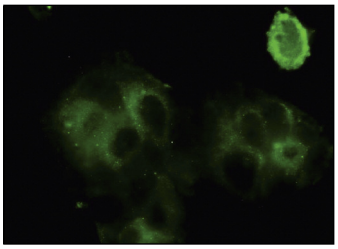
RECOMMENDED SUPPORT REAGENTS

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, 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 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



Grancalcin (Q-7): sc-100934. Western blot analysis of Grancalcin expression in MCF7 whole cell lysate.



Grancalcin (Q-7): sc-100934. Immunofluorescence staining of paraformaldehyde-fixed MCF7 cells showing cytoplasmic localization.

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.