SANTA CRUZ BIOTECHNOLOGY, INC.

Grancalcin siRNA (m): sc-145755

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 (mouse) mapping to 2 C1.3.

PRODUCT

Grancalcin siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Grancalcin shRNA Plasmid (m): sc-145755-SH and Grancalcin shRNA (m) Lentiviral Particles: sc-145755-V as alternate gene silencing products.

For independent verification of Grancalcin (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-145755A, sc-145755B and sc-145755C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Grancalcin siRNA (m) is recommended for the inhibition of Grancalcin expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Grancalcin (H-11): sc-393681 is recommended as a control antibody for monitoring of Grancalcin gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Grancalcin gene expression knockdown using RT-PCR Primer: Grancalcin (m)-PR: sc-145755-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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