SANTA CRUZ BIOTECHNOLOGY, INC.

GIMAP4 siRNA (m): sc-145400

BACKGROUND

The GTPase of the immunity-associated protein (GIMAP) family of proteins include seven members that are expressed by genes residing on human chromosome 7. GIMAP proteins have been implicated in the regulation of lymphomyeloid cell survival. GIMAP4 (GTPase IMAP family member 4), also known as IMAP4 (immunity-associated protein 4) and IAN1 (immunity-associated nucleotide 1 protein), is a 329 amino acid protein that contains five motifs that are conserved in GTP-binding proteins and a C-terminal coiled-coiled region that may be responsible for protein-protein interactions. GIMAP4 exhibits intrinsic GTPase activity that is highly dependent on magnesium concentration to bind GDP. Showing differential regulation during T-helper cell differentiation, GIMAP4 appears to regulate the apoptosis of T cells. GIMAP4 is specifically expressed in resting T and B lymphocytes and its protein expression is appreciably decreased upon T or B lymphocyte activation.

REFERENCES

1. Cambot, M., et al. 2002. Human immune associated nucleotide 1: a member of a new guanosine triphosphatase family expressed in resting T and B cells. Blood 99: 3293-3301.
2. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 608087. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Schnell, S., et al. 2006. GIMAP4 accelerates T-cell death. Blood 108: 591-599.
4. Taniwaki, M., et al. 2006. Gene expression profiles of small-cell lung cancers: molecular signatures of lung cancer. Int. J. Oncol. 29: 567-575.
5. Nitta, T., et al. 2006. IAN family critically regulates survival and development of T lymphocytes. PLoS Biol. 4: e103.
6. Carter, C., et al. 2007. A natural hypomorphic variant of the apoptosis regulator GIMAP4/IAN1. J. Immunol. 179: 1784-1795.
7. Shiao, Y.M., et al. 2008. Dysregulation of GIMAP genes in non-small cell lung cancer. Lung Cancer 62: 287-294.
8. Rutledge, E.A., et al. 2009. Sequence variation and expression of the Gimap gene family in the BB rat. Exp. Diabetes Res. 2009: 835650.

CHROMOSOMAL LOCATION

Genetic locus: Gimap4 (mouse) mapping to 6 B2.3.

PRODUCT

GIMAP4 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 GIMAP4 shRNA Plasmid (m): sc-145400-SH and GIMAP4 shRNA (m) Lentiviral Particles: sc-145400-V as alternate gene silencing products.

For independent verification of GIMAP4 (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-145400A, sc-145400B and sc-145400C.

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

GIMAP4 siRNA (m) is recommended for the inhibition of GIMAP4 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

GIMAP4 (C-4): sc-515595 is recommended as a control antibody for monitoring of GIMAP4 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 GIMAP4 gene expression knockdown using RT-PCR Primer: GIMAP4 (m)-PR: sc-145400-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.