SANTA CRUZ BIOTECHNOLOGY, INC.

GIMAP5 siRNA (m): sc-145401

BACKGROUND

GIMAP5 (GTPase, IMAP family member 5), also known as IAN5 (immunity-associated nucleotide 5), IAN4L1 (immunity-associated nucleotide 4-like 1 protein), IAN4, IMAP3, HIMAP3 or IROD, is a 307 amino acid single-pass type IV membrane protein of the mitochondrial outer membrane. A member of the GTP-binding superfamily and to the immuno-associated nucleotide (IAN) subfamily, GIMAP5 plays a role in T-cell survival and mitochondrial integrity. GIMAP5 is highly expressed in CD4 and CD8-positive T-cells and monocytes, as well as B-lymphocyte-derived neoplasms. GIMAP5 exists as two alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 7q36.1. Defects in the GIMAP5 gene are associated with systemic lupus erythematosus.

REFERENCES

1. Daheron, L., et al. 2001. Molecular cloning of Ian4: a Bcr/Abl-induced gene that encodes an outer membrane mitochondrial protein with GTP-binding activity. Nucleic Acids Res. 29: 1308-1316.
2. Stamm, O., et al. 2002. Human ortholog to mouse gene imap38 encoding an ER-localizable G protein belongs to a gene family clustered on chromosome 7q32-36. Gene 282: 159-167.
3. Krücken, J., et al. 2004. Comparative analysis of the human gimap gene cluster encoding a novel GTPase family. Gene 341: 291-304.
4. Keita, M., et al. 2007. GIMAP5 regulates mitochondrial integrity from a distinct subcellular compartment. Biochem. Biophys. Res. Commun. 361: 481-486.
5. Dalberg, U., et al. 2007. Both Gimap5 and the diabetogenic BBDP allele of Gimap5 induce apoptosis in T cells. Int. Immunol. 19: 447-453.
6. Hellquist, A., et al. 2007. The human GIMAP5 gene has a common polyadenylation polymorphism increasing risk to systemic lupus erythematosus. J. Med. Genet. 44: 314-321.
7. Lim, M.K., et al. 2009. IAN5 polymorphisms are associated with systemic lupus erythematosus. Lupus 18: 1045-1052.
8. Chadwick, N., et al. 2010. Notch protection against apoptosis in T-ALL cells mediated by GIMAP5. Blood Cells Mol. Dis. 45: 201-209.

CHROMOSOMAL LOCATION

Genetic locus: Gimap5 (mouse) mapping to 6 B2.3.

PRODUCT

GIMAP5 siRNA (m) is a pool of 2 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 GIMAP5 shRNA Plasmid (m): sc-145401-SH and GIMAP5 shRNA (m) Lentiviral Particles: sc-145401-V as alternate gene silencing products.

For independent verification of GIMAP5 (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-145401A and sc-145401B.

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

GIMAP5 siRNA (m) is recommended for the inhibition of GIMAP5 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

GIMAP5 (E-11): sc-377307 is recommended as a control antibody for monitoring of GIMAP5 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 GIMAP5 gene expression knockdown using RT-PCR Primer: GIMAP5 (m)-PR: sc-145401-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.