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- Expressversand

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# Rag A siRNA (m): sc-152683

## BACKGROUND

The Ras-related superfamily of guanine nucleotide binding proteins includes the R-Ras, Rap, Ral/Rec and Rho/Rab subfamilies all of which are thought to play an important role in either endocytosis or in biosynthetic protein transport. The process of transporting newly synthesized proteins from the endoplasmic reticulum (ER) to various stacks of the Golgi complex and to secretory vesicles involves the movement of carrier vesicles and requires Rab protein function. Rag A (Ras-related GTP binding A), also known as Rraga or FIP-1, is a 313 amino acid cytoplasmic and nuclear protein belonging to the GTR/RAG GTP-binding protein family. Involved in the RCC1/Ran-GTPase pathway, Rag A may play a direct role in a TNF $\alpha$  signaling pathway leading to induction of cell death. Rag A has guanine nucleotide-binding activity but undetectable intrinsic GTPase activity.

## REFERENCES

- Huber, L.A., et al. 1994. Mapping of Ras-related GTP-binding proteins by GTP overlay following two-dimensional gel electrophoresis. *Proc. Natl. Acad. Sci. USA* 91: 7874-7878.
- Schürmann, A., et al. 1995. Cloning of a novel family of mammalian GTP-binding proteins (RagA, RagBs, RagB1) with remote similarity to the Ras-related GTPases. *J. Biol. Chem.* 270: 28982-28988.
- Hirose, E., et al. 1998. RagA is a functional homologue of *S. cerevisiae* Gtr1p involved in the Ran/Gsp1-GTPase pathway. *J. Cell Sci.* 111: 11-21.
- Sekiguchi, T., et al. 2001. Novel G proteins, Rag C and Rag D, interact with GTP-binding proteins, Rag A and Rag B. *J. Biol. Chem.* 276: 7246-7257.
- Sekiguchi, T., et al. 2004. A novel human nucleolar protein, Nop132, binds to the G proteins, Rrag A/C/D. *J. Biol. Chem.* 279: 8343-8350.
- Merante, S., et al. 2006. First case of an AIDS patient with systemic mast cell disease associated with FIP1-positive eosinophilia treated with imatinib mesylate therapy. *J. Clin. Oncol.* 24: e6-e7.
- Sancak, Y., et al. 2008. The Rag GTPases bind raptor and mediate amino acid signaling to mTORC1. *Science* 320: 1496-1501.

## CHROMOSOMAL LOCATION

Genetic locus: Rraga (mouse) mapping to 4 C4.

## PRODUCT

Rag A 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Rag A shRNA Plasmid (m): sc-152683-SH and Rag A shRNA (m) Lentiviral Particles: sc-152683-V as alternate gene silencing products.

For independent verification of Rag A (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-152683A, sc-152683B and sc-152683C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Rag A siRNA (m) is recommended for the inhibition of Rag A 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  $\mu$ M in 66  $\mu$ l. 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rag A gene expression knockdown using RT-PCR Primer: Rag A (m)-PR: sc-152683-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.