SANTA CRUZ BIOTECHNOLOGY, INC.

FAM13A siRNA (h): sc-89263

BACKGROUND

GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. FAM13A (family with sequence similarity 13, member A), also known as FAM13A1, KIAA0914 or ARHGAP48 (rho GTPase activating protein 48), is a 1,023 amino acid protein that consists of one Rho-GAP domain and may function as a GTPase activator. FAM13A exists as five alternatively isoforms where isoform 1 is widely expressed, with highest expression in skeletal muscle, thymus, brain and lung while isoform 3 is predominantly expressed in kidney, pancreas, liver, lung and thymus. Mutations in the gene encoding FAM13A is associated with several common chronic lung diseases (CLD) such as chronic obstructive pulmonary disease (COPD), asthma, as well as in idiopathic interstitial pneumonias (IIP). The gene encoding FAM13A is located on human chromosome 4q22.1.

REFERENCES

1. Cohen, M., et al. 2004. Cloning and characterization of FAM13A1—a gene near a milk protein QTL on BTA6: evidence for population-wide linkage disequilibrium in Israeli Holsteins. Genomics 84: 374-383.
2. Pillai, S.G., et al. 2010. Loci identified by genome-wide association studies influence different disease-related phenotypes in chronic obstructive pulmonary disease. Am. J. Respir. Crit. Care Med. 182: 1498-1505.
3. Cho, M.H., et al. 2010. Variants in FAM13A are associated with chronic obstructive pulmonary disease. Nat. Genet. 42: 200-202.
4. Guo, Y., et al. 2011. Genetic analysis of IREB2, FAM13A and XRCC5 variants in Chinese Han patients with chronic obstructive pulmonary disease. Biochem. Biophys. Res. Commun. 415: 284-287.
5. Cho, M.H., et al. 2012. A genome-wide association study of COPD identifies a susceptibility locus on chromosome 19q13. Hum. Mol. Genet. 21: 947-957.
6. Wang, B., et al. 2013. Association of FAM13A polymorphisms with COPD and COPD-related phenotypes in Han Chinese. Clin. Biochem. 46: 1683-1688.

CHROMOSOMAL LOCATION

Genetic locus: FAM13A (human) mapping to 4q22.1.

PRODUCT

FAM13A siRNA (h) 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 FAM13A shRNA Plasmid (h): sc-89263-SH and FAM13A shRNA (h) Lentiviral Particles: sc-89263-V as alternate gene silencing products.

For independent verification of FAM13A (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-89263A, sc-89263B and sc-89263C.

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

FAM13A siRNA (h) is recommended for the inhibition of FAM13A expression in human 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FAM13A gene expression knockdown using RT-PCR Primer: FAM13A (h)-PR: sc-89263-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.