SANTA CRUZ BIOTECHNOLOGY, INC.

GAREM siRNA (m): sc-145636

BACKGROUND

Mitogen-activated protein (MAP) kinases are a large class of proteins involved in signal transduction pathways that are activated by a range of stimuli and mediate a number of physiological and pathological changes in the cell. GAREM (GRB2 associated, regulator of MAPK1), also known as Gm944, FAM59A or C18orf11, is an 876 amino acid plasma membrane adapter protein that participates in intracellular signaling cascades triggered either by the cell surface activated EGFR and/or cytoplasmic protein tyrosine kinases. Involved in regulating cell proliferation, GAREM is expressed ubiquitously and consists of a SAM (sterile α motif) domain. GAREM interacts with GRB2 via SH3 domains upon EGFR stimulation. GAREM exists as three alternatively spliced isoforms and is encoded by a gene located on human chromosome 18q12.1, which encodes over 300 genes and contains about 76 million bases.

REFERENCES

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2. Keyse, S.M. 1995. An emerging family of dual specificity MAP kinase phosphatases. Biochim. Biophys. Acta 1265: 152-160.
3. Tashiro, K., et al. 2009. GAREM, a novel adaptor protein for growth factor receptor-bound protein 2, contributes to cellular transformation through the activation of extracellular signal-regulated kinase signaling. J. Biol. Chem. 284: 20206-20214.
4. Zeng, J.L., et al. 2011. A genome-wide screen for promoter-specific sites of differential DNA methylation during human cell malignant transformation *in vitro*. Zhonghua Yu Fang Yi Xue Za Zhi 45: 404-409.
5. Kim, J.J., et al. 2012. Exome sequencing and subsequent association studies identify five amino acid-altering variants influencing human height. Hum. Genet. 131: 471-478.
6. Taniguchi, T., et al. 2013. A brain-specific Grb2-associated regulator of extracellular signal-regulated kinase (Erk)/mitogen-activated protein kinase (MAPK) (GAREM) subtype, GAREM2, contributes to neurite outgrowth of neuroblastoma cells by regulating Erk signaling. J. Biol. Chem. 288: 29934-29942.
7. Tzouros, M., et al. 2013. Development of a 5-plex SILAC method tuned for the quantitation of tyrosine phosphorylation dynamics. Mol. Cell. Proteomics 12: 3339-3349.

CHROMOSOMAL LOCATION

Genetic locus: Fam59a (mouse) mapping to 18 A2.

PRODUCT

GAREM siRNA (m) is a target-specific 19-25 nt siRNA 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 GAREM shRNA Plasmid (m): sc-145636-SH and GAREM shRNA (m) Lentiviral Particles: sc-145636-V as alternate gene silencing products.

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

GAREM siRNA (m) is recommended for the inhibition of GAREM 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GAREM gene expression knockdown using RT-PCR Primer: GAREM (m)-PR: sc-145636-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.