SANTA CRUZ BIOTECHNOLOGY, INC.

RAET1G siRNA (h): sc-106477

BACKGROUND

RAET1 proteins contain MHC class I-like α-1 and α-2 domains. RAET1G and ULBP4 (also known as RAET1E) differ from the other RAET1 proteins in that they have type I membrane-spanning sequences at their C termini rather than glycosylphosphatidylinositol anchor sequences. RAET1G (retinoic acid early transcript 1G protein) is a 334 amino acid single-pass type I membrane protein that belongs to the MHC class I family. The RAET1 protein acts as a ligand for the NKG2-D receptor and mediates NK cell cytotoxicity via the receptor. Highly expressed in colon and in a number of tumor cell lines, RAET1 binds to NKG2-D as well as to the CMV glycoprotein ULBP. The RAET1G protein is 85% similar to the ULBP2 protein. Existing as two alternatively spliced isoforms, the RAET1G gene maps to human chromosome 6q25.1, contains five exons and spans about 6 kb.

REFERENCES

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2. Bacon, L., et al. 2004. Two human ULBP/RAET1 molecules with transmembrane regions are ligands for NKG2D. J. Immunol. 173: 1078-1084.
3. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609244. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Wittenbrink, M., et al. 2009. Differential NKG2D binding to highly related human NKG2D ligands ULBP2 and RAET1G is determined by a single amino acid in the α2 domain. Eur. J. Immunol. 39: 1642-1651.
5. Romphruk, A.V., et al. 2009. Polymorphisms of NKG2D ligands: diverse RAET1/ULBP genes in northeastern Thais. Immunogenetics 61: 611-617.
6. Antoun, A., et al. 2010. Single nucleotide polymorphism analysis of the NKG2D ligand cluster on the long arm of chromosome 6: extensive polymorphisms and evidence of diversity between human populations. Hum. Immunol. 71: 610-620.
7. Ohashi, M., et al. 2010. Post-translational modification of the NKG2D ligand RAET1G leads to cell surface expression of a glycosylphosphatidylinositol-linked isoform. J. Biol. Chem. 285: 16408-16415.

CHROMOSOMAL LOCATION

Genetic locus: RAET1G (human) mapping to 6q25.1.

PRODUCT

RAET1G siRNA (h) 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 RAET1G shRNA Plasmid (h): sc-106477-SH and RAET1G shRNA (h) Lentiviral Particles: sc-106477-V as alternate gene silencing products.

For independent verification of RAET1G (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-106477A and sc-106477B.

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

RAET1G siRNA (h) is recommended for the inhibition of RAET1G 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.

GENE EXPRESSION MONITORING

RAET1G (6D10): sc-53134 is recommended as a control antibody for monitoring of RAET1G 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RAET1G gene expression knockdown using RT-PCR Primer: RAET1G (h)-PR: sc-106477-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.