SANTA CRUZ BIOTECHNOLOGY, INC.

Rap 1 siRNA (r): sc-270358

BACKGROUND

Ras oncogenes encode GTP-binding proteins that are capable of transforming immortalized cells in culture. Two Ras-related human genes, designated Rap 1A and Rap 1B, encode 95% homologous proteins that share with Ras proteins a similar C-terminal Cys-Ali-Ali-Xaa sequence and are ubiquitously expressed in mammalian tissues. The putative "effector" domain of Ras proteins whose integrity is required for cell transformation as well as interaction with the putative effector protein GAP is conserved in both Rap 1 proteins. It has been postulated that p21Rap 1 acts to interfere with Ras effector function by binding to Ras GAP. In fact, it is known that p21Rap 1 binds to Ras GAP *in vitro* in a GTP-dependent manner without affecting p21Rap 1 GTPase activity. A GAP protein specific for p21Rap 1 has been identified and the corresponding cDNA has been isolated.

REFERENCES

1. Pizon, V., et al. 1988. Human cDNAs Rap 1 and Rap 2 homologous to the *Drosophilia* gene Dras3 encode proteins closely related to Ras in the "effector" region. Oncogene 3: 201-204.
2. Pizon, V., et al. 1988. Nucleotide sequence of a human cDNA encoding a Ras-related protein (Rap 1B). Nucleic Acids Res. 16: 7719.
3. Kitayama, H., et al. 1989. A Ras-related gene with transformation suppressor activity. Cell 56: 77-84.
4. Culine, S., et al. 1989. Expression of the Ras-related Rap genes in human tumors. Int. J. Cancer 44: 990-994.
5. Kim, S., et al. 1990. Tissue and subcellular distributions of the smg-21/Rap 1/Krev-1 proteins which are partly distinct from those of c-Ras p21s. Mol. Cell. Biol. 10: 2645-2652.
6. Frech, M., et al. 1990. Inhibition of GTPase activating protein stimulation of Ras-p21 GTPase by the Krev-1 gene product. Science 249: 169-171.
7. Beranger, F., et al. 1991. Post-translational processing and subcellular localization of the Ras-related Rap 2 protein. Oncogene 6: 1835-1842.
8. Jimenez, B., et al. 1991. Effects of the Ras-related Rap 2 protein on cellular proliferation. Int. J. Cancer 49: 471-479.

CHROMOSOMAL LOCATION

Genetic locus: Rap1a (rat) mapping to 2q34, Rap1b (rat) mapping to 7q22.

PRODUCT

Rap 1 siRNA (r) is a pool of 4 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 Rap 1 shRNA Plasmid (r): sc-270358-SH and Rap 1 shRNA (r) Lentiviral Particles: sc-270358-V as alternate gene silencing products.

For independent verification of Rap 1 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270358A, sc-270358B, sc-270358C and sc-270358D.

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

Rap 1 siRNA (r) is recommended for the inhibition of Rap 1 expression in rat 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

Rap 1 (E-6): sc-398755 is recommended as a control antibody for monitoring of Rap 1 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.

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.