SANTA CRUZ BIOTECHNOLOGY, INC.

Grap siRNA (m): sc-40961

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Many growth factors function by binding receptors with intrinsic tyrosine kinase activity. Signaling by such receptors involves a series of intermediates characterized by SH2 domains that bind tyrosine phosphorylated receptors by a direct interaction between the SH2 domain and specific receptor sequences. For instance, the GRB family of proteins lack a defined catalytic activity and are entirely composed of SH2 and SH3 domains. Members include GRB2, GRB7, GRB10 (also referred to as GRB-IR), GRB14 and Grap (for GRB2-related adapter protein). While GRB10 and GRB14 are most closely related to GRB7, Grap shares the highest degree of homology with GRB2 exhibiting 59% sequence identity with GRB2. The Grap SH2 domain is capable of binding to the activated stem cell factor receptor, c-Kit and the erythropoietin receptor (EpoR). Grap also associates with the Ras guanine nucleotide exchange factor Sos 1 via its amino terminal SH3 domain.

REFERENCES

1. Schlessinger, J., et al. 1992. Growth factor signalling by receptor tyrosine kinases. Neuron 9: 383-391.
2. Margolis, B., et al. 1992. High-efficiency expression/cloning of epidermal growth factor-receptor-binding proteins with Src homology 2 domains. Proc. Natl. Acad. Sci. USA 89: 8894-8898.
3. Fanti, W.J., et al. 1993. Signalling by receptor tyrosine kinases. Ann. Rev. Biochem. 62: 453-481.
4. Stein, D., et al. 1994. The SH2 domain protein GRB-7 is co-amplified, over-expressed and in a tight complex with HER2 in breast cancer. EMBO J. 13: 1331-1340.
5. Ooi, J., et al. 1995. The cloning of Grb10 reveals a new family of SH2 domain proteins. Oncogene 10: 1621-1630.
6. Daly, R.J., et al. 1996. Cloning and characterization of GRB14, a novel member of the GRB7 gene family. J. Biol. Chem. 271: 12502-12510.
7. Feng, G.S., et al. 1996. Grap is a novel SH3-SH2-SH3 adaptor protein that couples tyrosine kinases to the Ras pathway. J. Biol. Chem. 271: 12129-12132.

CHROMOSOMAL LOCATION

Genetic locus: Grap (mouse) mapping to 11 B2.

PRODUCT

Grap 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Grap shRNA Plasmid (m): sc-40961-SH and Grap shRNA (m) Lentiviral Particles: sc-40961-V as alternate gene silencing products.

For independent verification of Grap (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-40961A, sc-40961B and sc-40961C.

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

Grap siRNA (m) is recommended for the inhibition of Grap 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 Grap gene expression knockdown using RT-PCR Primer: Grap (m)-PR: sc-40961-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.