SANTA CRUZ BIOTECHNOLOGY, INC.

GRB14 siRNA (h): sc-40963

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 phospho-tyrosine-containing receptor sequences. GRB7, a SH2 domain protein, has a single SH2 domain at its C-terminal, a central region with similarity to Ras GAP and a proline-rich N-terminus. A related SH2 domain-containing protein, GRB10, exhibits a high degree of homology with GRB7. GRB10 undergoes serine but not tyrosine phosphorylation in response to EGF treatment, but appears to bind to the EGF receptor poorly. An additional member of the GRB7 family, designated GRB14, contains a Pleckstrin homology domain in its central region and a carboxy-terminal SH2 domain. GRB14 mRNA is expressed at high levels in a broad range of tissues including liver, kidney, pancreas, testis, ovary, heart and skeletal muscle. Expression of the GRB14 protein in breast carcinomas is strongly correlated with estrogen receptor positivity.

REFERENCES

1. Schlessinger, J. and Ullrich, A. 1992. Growth factor signalling by receptor tyrosine kinases. Neuron 9: 383-391.
2. Margolis, B. 1992. Proteins with SH2 domains: transducers in the tyrosine kinase signalling pathway. Cell Growth Differ. 3: 73-80.
3. Fanti, W.J., et al. 1993. Signalling by receptor tyrosine kinases. Annu. Rev. Biochem. 62: 453-481.
4. Stein, D., et al. 1994. The SH2 domain protein GRB7 is co-amplified, overexpressed 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. Wandless, T.J. 1996. SH2 domains: a question of independence. Curr. Biol. 6: 125-127.
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: GRB14 (human) mapping to 2q24.3.

PRODUCT

GRB14 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 GRB14 shRNA Plasmid (h): sc-40963-SH and GRB14 shRNA (h) Lentiviral Particles: sc-40963-V as alternate gene silencing products.

For independent verification of GRB14 (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-40963A, sc-40963B and sc-40963C.

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

GRB14 siRNA (h) is recommended for the inhibition of GRB14 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 GRB14 gene expression knockdown using RT-PCR Primer: GRB14 (h)-PR: sc-40963-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.