

Raver1 siRNA (m): sc-152717

BACKGROUND

Raver1, also known as Ribonucleoprotein PTB-binding 1, is a widely expressed 606 amino acid protein that forms complexes with microfilament-associated proteins such as vinculin, metavinculin and α -Actin at microfilament attachment sites. Localized to either the nucleus or cytoplasm, Raver1 regulates alternative splicing events by associating with hnRNP I. With three RNA recognition motifs (RRM) near the N-terminus, Raver1 is thought to function as a potent splicing co-repressor by promotion of exon skipping. In myocytes, Raver1 has been shown to translocate from the nucleus to the cytoplasm, targeting the costamere. Here, it complexes with microfilament-associated proteins during muscle cell differentiation, which suggests that Raver1 may coordinate RNA targeting and processing as required for microfilament anchoring in adhesion sites. There are three isoforms of Raver1 due to alternative splicing events.

REFERENCES

- Markovtsov, V., Nikolic, J.M., Goldman, J.A., Turck, C.W., Chou, M.Y. and Black, D.L. 2000. Cooperative assembly of an hnRNP complex induced by a tissue-specific homolog of polypyrimidine tract binding protein. *Mol. Cell Biol.* 20: 7463-7479.
- Hüttelmaier, S., Illenberger, S., Grosheva, I., Rüdiger, M., Singer, R.H. and Jockusch, B.M. 2001. Raver1, a dual compartment protein, is a ligand for PTB/hnRNP1 and microfilament attachment proteins. *J. Cell Biol.* 155: 775-786.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609950. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Gromak, N., Rideau, A., Southby, J., Scadden, A.D., Gooding, C., Hüttelmaier, S., Singer, R.H. and Smith, C.W. 2003. The PTB interacting protein raver1 regulates α -tropomyosin alternative splicing. *EMBO J.* 22: 6356-6364.
- Spellman, R., Rideau, A., Matlin, A., Gooding, C., Robinson, F., McGlinchy, N., Grellscheid, S.N., Southby, J., Wollerton, M. and Smith, C.W. 2005. Regulation of alternative splicing by PTB and associated factors. *Biochem. Soc. Trans.* 33: 457-460.
- Kleinhenz, B., Fabienke, M., Swiniarski, S., Wittenmayer, N., Kirsch, J., Jockusch, B.M., Arnold, H.H. and Illenberger, S. 2005. Raver2, a new member of the hnRNP family. *FEBS Lett.* 579: 4254-4258.
- Rideau, A.P., Gooding, C., Simpson, P.J., Monie, T.P., Lorenz, M., Hüttelmaier, S., Singer, R.H., Matthews, S., Curry, S. and Smith, C.W. 2006. A peptide motif in Raver1 mediates splicing repression by interaction with the PTB RRM2 domain. *Nat. Struct. Mol. Biol.* 13: 839-848.
- Zieseniss, A., Schroeder, U., Buchmeier, S., Schoenenberger, C.A., van den Heuvel, J., Jockusch, B.M. and Illenberger, S. 2007. Raver1 is an integral component of muscle contractile elements. *Cell Tissue Res.* 327: 583-594.
- Romanelli, M.G., Lorenzi, P., Avesani, F. and Morandi, C. 2007. Functional characterization of the ribonucleoprotein, PTB-binding 1/Raver1 promoter region. *Gene* 405: 79-87.

CHROMOSOMAL LOCATION

Genetic locus: Raver1 (mouse) mapping to 9 A3.

PRODUCT

Raver1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Raver1 shRNA Plasmid (m): sc-152717-SH and Raver1 shRNA (m) Lentiviral Particles: sc-152717-V as alternate gene silencing products.

For independent verification of Raver1 (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-152717A, sc-152717B and sc-152717C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Raver1 siRNA (m) is recommended for the inhibition of Raver1 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 μ M in 66 μ l. 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 Raver1 gene expression knockdown using RT-PCR Primer: Raver1 (m)-PR: sc-152717-PR (20 μ l). 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.