

SHROOM4 siRNA (m): sc-153456

BACKGROUND

SHROOM4 is a 1,493 amino acid protein that belongs to the Shroom family, which contain an N-terminal PDZ domain and a C-terminal ASD2 motif. SHROOM4 interacts directly with F-Actin. As a probable regulator of cytoskeletal architecture that plays an important role in development, SHROOM4 may regulate cellular and cytoskeletal architecture by modulating the spatial distribution of myosin II. Defects in SHROOM4 are the cause of mental retardation syndromic X-linked Stocco dos Santos type (SDSX). SDSX is a syndrome characterized by severe mental retardation with hyperactivity, aggressive behavior, delayed or no speech and seizures. Additional features of SDSX include congenital bilateral hip luxation, short stature and kyphosis. Existing as two alternatively spliced isoforms, the SHROOM4 gene is conserved in canine, mouse and rat, and maps to human chromosome Xp11.22.

REFERENCES

1. dos Santos, R.C., Barretto, O.C., Nonoyama, K., Castro, N.H., Ferraz, O.P., Walter-Moura, J., Vescio, C.C. and Beçak, W. 1991. X-linked syndrome: mental retardation, hip luxation, and G6PD variant (Gd⁺ Butantan). *Am. J. Med. Genet.* 39: 133-136.
2. Stocco dos Santos, R.C., Castro, N.H., Lillia Holmes, A., Beçak, W., Tackels-Horne, D., Lindsey, C.J., Lubs, H.A., Stevenson, R.E. and Schwartz, C.E. 2003. Stocco dos Santos X-linked mental retardation syndrome: clinical elucidation and localization to Xp11.3-Xq21.3. *Am. J. Med. Genet. A* 118A: 255-259.
3. Hagens, O., Ballabio, A., Kalscheuer, V., Kraehenbuhl, J.P., Schiaffino, M.V., Smith, P., Staub, O., Hildebrand, J. and Wallingford, J.B. 2006. A new standard nomenclature for proteins related to Apx and Shroom. *BMC Cell Biol.* 7: 18.
4. Hagens, O., Dubos, A., Abidi, F., Barbi, G., Van Zutven, L., Hoeltzenbein, M., Tommerup, N., Moraine, C., Fryns, J.P., Chelly, J., van Bokhoven, H., Gecz, J., Dollfus, H., Ropers, H.H., Schwartz, C.E., et al. 2006. Disruptions of the novel KIAA1202 gene are associated with X-linked mental retardation. *Hum. Genet.* 118: 578-590.
5. Dietz, M.L., Bernaciak, T.M., Vendetti, F., Kielec, J.M. and Hildebrand, J.D. 2006. Differential Actin-dependent localization modulates the evolutionarily conserved activity of Shroom family proteins. *J. Biol. Chem.* 281: 20542-20554.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2006 Johns Hopkins University, Baltimore, MD. MIM Number: 300579. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Yoder, M. and Hildebrand, J.D. 2007. SHROOM4 (Kiaa1202) is an Actin-associated protein implicated in cytoskeletal organization. *Cell Motil. Cytoskeleton* 64: 49-63.
8. Lee, C., Le, M.P. and Wallingford, J.B. 2009. The Shroom family proteins play broad roles in the morphogenesis of thickened epithelial sheets. *Dev. Dyn.* 238: 1480-1491.

CHROMOSOMAL LOCATION

Genetic locus: Shroom4 (mouse) mapping to X A1.1.

PRODUCT

SHROOM4 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 SHROOM4 shRNA Plasmid (m): sc-153456-SH and SHROOM4 shRNA (m) Lentiviral Particles: sc-153456-V as alternate gene silencing products.

For independent verification of SHROOM4 (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-153456A, sc-153456B and sc-153456C.

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

SHROOM4 siRNA (m) is recommended for the inhibition of SHROOM4 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 SHROOM4 gene expression knockdown using RT-PCR Primer: SHROOM4 (m)-PR: sc-153456-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.