SANTA CRUZ BIOTECHNOLOGY, INC.

PAMR1 siRNA (h): sc-96863

BACKGROUND

PAMR1 (peptidase domain containing associated with muscle regeneration 1), also known as RAMP or FP938, is a 720 amino acid secreted protein that belongs to the peptidase S1 family. Consisting of one CUB domain, an EGF-like domain, a peptidase S1 domain and two sushi (CCP/SCR) domains, PAMR1 may participate in regeneration of skeletal muscle. PAMR1 is strongly down-regulated in muscle cell lines derived from Duchenne muscular dystrophy (DMD) patients compared to a normal muscle cell line. DMD is the second most common genetically inherited disease in humans and is characterized by progressive limb-girdle distribution of muscle weakness. PAMR1 exists as two alternatively spliced isoforms and is encoded by a gene located on human chromosome 11, which contains 135 million base pairs and 1,400 genes, making up around 4% of human genomic DNA.

REFERENCES

1. Anderson, J.L., Head, S.I., Rae, C. and Morley, J.W. 2002. Brain function in Duchenne muscular dystrophy. Brain 125: 4-13.
2. Nakayama, Y., Nara, N., Kawakita, Y., Takeshima, Y., Arakawa, M., Katoh, M., Morita, S., Iwatsuki, K., Tanaka, K., Okamoto, S., Kitamura, T., Seki, N., Matsuda, R., Matsuo, M., Saito, K. and Hara, T. 2004. Cloning of cDNA encoding a regeneration-associated muscle protease whose expression is attenuated in cell lines derived from Duchenne muscular dystrophy patients. Am. J. Pathol. 164: 1773-1782.
3. Hara, T., Nakayama, Y. and Nara, N. 2005. Regenerative medicine of skeletal muscle. Rinsho Shinkeigaku 45: 880-882.
4. Taylor, T.D., Noguchi, H., Totoki, Y., Toyoda, A., Kuroki, Y., Dewar, K., Lloyd, C., Itoh, T., Takeda, T., Kim, D.W., She, X., Barlow, K.F., Bloom, T., Bruford, E., Chang, J.L., Cuomo, C.A., Eichler, E., Fitzgerald, M.G., Jaffe, D.B., et al. 2006. Human chromosome 11 DNA sequence and analysis including novel gene identification. Nature 440: 497-500.
5. Allen, D.G. and Whitehead, N.P. 2010. Duchenne muscular dystrophy-What causes the increased membrane permeability in skeletal muscle? Int. J. Biochem. Cell Biol. 43: 290-294.
6. Jeon, H., Go, Y., Seo, M., Lee, W.H. and Suk, K. 2010. Functional selection of phagocytosis-promoting genes: cell sorting-based selection. J. Biomol. Screen. 15: 949-955.
7. Tsakadze, N., Katzin, L.W., Krishnan, S. and Behrouz, R. 2010. Cerebral infarction in Duchenne muscular dystrophy. J. Stroke Cerebrovasc. Dis. 20: 264-265.

CHROMOSOMAL LOCATION

Genetic locus: PAMR1 (human) mapping to 11p13.

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.

PRODUCT

PAMR1 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 PAMR1 shRNA Plasmid (h): sc-96863-SH and PAMR1 shRNA (h) Lentiviral Particles: sc-96863-V as alternate gene silencing products.

For independent verification of PAMR1 (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-96863A, sc-96863B and sc-96863C.

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

PAMR1 siRNA (h) is recommended for the inhibition of PAMR1 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 PAMR1 gene expression knockdown using RT-PCR Primer: PAMR1 (h)-PR: sc-96863-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.