SANTA CRUZ BIOTECHNOLOGY, INC.

AHNAK2 siRNA (h): sc-92258

BACKGROUND

AHNAK2 (AHNAK nucleoprotein 2) is a 5,795 amino acid protein that functions in protein binding activities. Encoded by a gene that maps to human chromosome 14q32.33, AHNAK2 localizes to the nucleus and exists as three alternatively spliced isoforms. Composed of a large number of highly conserved repeat segments, AHNAK2 contains one PDZ (DHR) domain and at least seven exons, with the first six being relatively small and the seventh almost 18 kb in size. AHNAK2 likely contains its PDZ (DHR) domain within its nonrepeating N-terminus, suggesting AHNAK2 is involved in calcium channel functions and the regulation of excitation/contraction coupling of cardiomyocytes. AHNAK2 may be associated with degenerative muscle disorders.

REFERENCES

1. Komuro, A., Masuda, Y., Kobayashi, K., Babbitt, R., Gunel, M., Flavell, R.A. and Marchesi, V.T. 2004. The AHNAKs are a class of giant propeller-like proteins that associate with calcium channel proteins of cardiomyocytes and other cells. Proc. Natl. Acad. Sci. USA 101: 4053-4058.
2. Ding, Z., Liang, J., Lu, Y., Yu, Q., Songyang, Z., Lin, S.Y. and Mills, G.B. 2006. A retrovirus-based protein complementation assay screen reveals functional AKT1-binding partners. Proc. Natl. Acad. Sci. USA 103: 15014-15019.
3. Haase, H. 2007. Ahnak, a new player in β-adrenergic regulation of the cardiac L-type Ca^{2+} channel. Cardiovasc. Res. 73: 19-25.
4. Huang, Y., Laval, S.H., van Remoortere, A., Baudier, J., Benaud, C., Anderson, L.V., Straub, V., Deelder, A., Frants, R.R., den Dunnen, J.T., Bushby, K. and van der Maarel, S.M. 2007. AHNAK, a novel component of the dysferlin protein complex, redistributes to the cytoplasm with dysferlin during skeletal muscle regeneration. FASEB J. 21: 732-742.
5. Huang, Y., de Morrɛe, A., van Remoortere, A., Bushby, K., Frants, R.R., Dunnen, J.T. and van der Maarel, S.M. 2008. Calpain 3 is a modulator of the dysferlin protein complex in skeletal muscle. Hum. Mol. Genet. 17: 1855-1866.
6. Alli, A.A. and Gower, W.R. 2009. The C type natriuretic peptide receptor tethers AHNAK1 at the plasma membrane to potentiate arachidonic acid-induced calcium mobilization. Am. J. Physiol., Cell Physiol. 297: C1157-C1167.
7. Hower, S., Wolf, K. and Fields, K.A. 2009. Evidence that CT694 is a novel *Chlamydia trachomatis* T3S substrate capable of functioning during invasion or early cycle development. Mol. Microbiol. 72: 1423-1437.
8. Marg, A., Haase, H., Neumann, T., Kouno, M. and Morano, I. 2010. AHNAK1 and AHNAK2 are costameric proteins: AHNAK1 affects transverse skeletal muscle fiber stiffness. Biochem. Biophys. Res. Commun.401: 143-148.
9. Alvarez, J.L., Petzhold, D., Pankonien, I., Behlke, J., Kouno, M., Vassort, G., Morano, I. and Haase, H. 2010. Ahnak1 modulates L-type Ca^{2+} channel inactivation of rodent cardiomyocytes. Pflugers Arch. 460: 719-730.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: AHNAK2 (human) mapping to 14q32.33.

PRODUCT

AHNAK2 siRNA (h) is a pool of 2 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 AHNAK2 shRNA Plasmid (h): sc-92258-SH and AHNAK2 shRNA (h) Lentiviral Particles: sc-92258-V as alternate gene silencing products.

For independent verification of AHNAK2 (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-92258A and sc-92258B.

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

AHNAK2 siRNA (h) is recommended for the inhibition of AHNAK2 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 AHNAK2 gene expression knockdown using RT-PCR Primer: AHNAK2 (h)-PR: sc-92258-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.