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SANTA CRUZ BIOTECHNOLOGY, INC.

Na^+/K^+ ATPase β4 siRNA (m): sc-149790

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

The ubiquitously expressed sodium/potassium-ATPase (Na^+/K^+-ATPase) is an oligomeric plasma membrane complex that couples the hydrolysis of one molecule of ATP to the import of three Na^+ ions and two K^+ ions against their respective electrochemical gradients. As a member of the P-type family of ion motives, Na^+/K^+-ATPase plays a critical role in maintaining cellular volume, resting membrane potential and Na^+-coupled solute transport. Multiple isoforms of three subunits, designated α, β and γ, comprise the Na^+/K^+-ATPase oligomer. The α subunit contains the binding sites for ATP and the cations, while the glycosylated β subunit ensures correct folding and membrane insertion of the α subunits. The small γ subunit co-localizes with the α subunit in nephron segments, where it increases the affinity of Na^+/K^+-ATPase for ATP. The β subunit, but not the γ subunit, is essential for normal activity of Na^+/K^+-ATPase. Na^+/K^+ ATPase β4, also known as ATP1B4 or X,K-ATPase subunit β-m, is a 357 amino acid protein that is highly expressed in skeletal muscle and exists as two alternatively spliced isoforms.

REFERENCES

1. Pedemonte, C.H. and Kaplan, J.H. 1990. Chemical modification as an approach to elucidation of sodium pump structure-function relations. Am. J. Physiol. 258: C1-C23.
2. Ackermann, U. and Geering, K. 1990. Mutual dependence of Na,K-ATPase α- and β-subunits for correct posttranslational processing and intracellular transport. FEBS Lett. 269: 105-108.
3. Pressley, T.A. 1996. Structure and function of the Na,K pump: ten years of molecular biology. Miner. Electrolyte Metab. 22: 264-271.
4. Stengelin, M.K. and Hoffman, J.F. 1997. Na,K-ATPase subunit isoforms in human reticulocytes: evidence from reverse transcription-PCR for the presence of α1, α3, β2, β3, and γ. Proc. Natl. Acad. Sci. USA 94: 5943-5948.
5. Avila, J., Alvarez de la Rosa, D., González-Martínez, L.M., Lecuona, E. and Martín-Vasallo, P. 1998. Structure and expression of the human Na,K-ATPase β2-subunit gene. Gene 208: 221-227.
6. Pestov, N.B., Adams, G., Shakhparonov, M.I. and Modyanov, N.N. 1999. Identification of a novel gene of the X,K-ATPase β-subunit family that is predominantly expressed in skeletal and heart muscles. FEBS Lett. 456: 243-248.
7. Zhao, H., Pestov, N.B., Korneenko, T.V., Shakhparonov, M.I. and Modyanov, N.N. 2004. Accumulation of β (m), a structural member of X,K-ATPase β-subunit family, in nuclear envelopes of perinatal myocytes. Am. J. Physiol., Cell Physiol. 286: C757-C767.
8. Kung, A.W., Lau, K.S., Cheung, W.M. and Chan, V. 2006. Thyrotoxic periodic paralysis and polymorphisms of sodium-potassium ATPase genes. Clin. Endocrinol. 64: 158-161.

CHROMOSOMAL LOCATION

Genetic locus: Atp1b4 (mouse) mapping to X A3.3.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Na^+/K^+ ATPase β4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Na^+/K^+ ATPase β4 shRNA Plasmid (m): sc-149790-SH and Na^+/K^+ ATPase β4 shRNA (m) Lentiviral Particles: sc-149790-V as alternate gene silencing products.

For independent verification of Na^+/K^+ ATPase β4 (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-149790A, sc-149790B and sc-149790C.

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

Na^+/K^+ ATPase β4 siRNA (m) is recommended for the inhibition of Na^+/K^+ ATPase β4 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 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 Na^+/K^+ ATPase β4 gene expression knockdown using RT-PCR Primer: Na^+/K^+ ATPase β4 (m)-PR: sc-149790-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Xiao, Y., et al. 2017. Ouabain targets the Na^+/K^+-ATPase α3 isoform to inhibit cancer cell proliferation and induce apoptosis. Oncol. Lett. 14: 6678-6684.

PROTOCOLS

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