SANTA CRUZ BIOTECHNOLOGY, INC.

ANKH siRNA (h): sc-61972

BACKGROUND

ANKH (progressive ankylosis protein homolog) is a multi-pass transmembrane protein involved in bone mineralization and joint maintenance. ANKH is a ubiquitously expressed protein with high expression levels in the embryonic developing articular cartilage of joints in the elbow, wrist, shoulders and digits. Expression of ANKH is regulated by cytokines and various growth factors. ANKH functions as a transporter, regulating the extracellular transport of inorganic pyrophosphates (PPi). The extracellular level of inorganic pyrophosphates can both inhibit and promote different types of pathologic mineralization. Mutations in ANKH are associated with various human skeletal defects including calcium pyrophosphate deposition disease (CPPD) and craniometaphyseal dysplasia Jackson type (CMDJ).

REFERENCES

1. Costello, J.C., et al. 2004. Modulation of chondrocyte production of extracellular inorganic pyrophosphate. Curr. Opin. Rheumatol. 16: 268-272.
2. Tsui, H.W., et al. 2005. ANKH variants associated with ankylosing spondylitis: gender differences. Arthritis Res. Ther. 7: R513-525.
3. Zhang, Y., et al. 2005. Association of sporadic chondrocalcinosis with a-4-basepair G-to-A transition in the 5'-untranslated region of ANKH that promotes enhanced expression of ANKH protein and excess generation of extracellular inorganic pyrophosphate. Arthritis Rheum. 52: 1110-1117.
4. Malkin, I., et al. 2005. Association of ANKH gene polymorphisms with radiographic hand bone size and geometry in a Chuvasha population. Bone 36: 365-373.
5. Coe, B.P., et al. 2005. High-resolution chromosome arm 5p array CGH analysis of small cell lung carcinoma cell lines. Genes Chromosomes Cancer 42: 308-313.
6. Zaka, R., et al. 2005. Genetics of chondrocalcinosis. Osteoarthr. Cartil. 13: 745-750.
7. Gurley, K.A., et al. 2006. Biochemical and genetic analysis of ANK in arthritis and bone disease. Am. J. Hum. Genet. 79: 1017-1029.
8. Malkin, I., et al. 2006. Strong association between polymorphisms in ANKH locus and skeletal size traits. Hum. Genet. 120: 42-51.

CHROMOSOMAL LOCATION

Genetic locus: ANKH (human) mapping to 5p15.2.

PRODUCT

ANKH 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 ANKH shRNA Plasmid (h): sc-61972-SH and ANKH shRNA (h) Lentiviral Particles: sc-61972-V as alternate gene silencing products.

For independent verification of ANKH (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-61972A, sc-61972B and sc-61972C.

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

ANKH siRNA (h) is recommended for the inhibition of ANKH 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 ANKH gene expression knockdown using RT-PCR Primer: ANKH (h)-PR: sc-61972-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.

PROTOCOLS

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