SANTA CRUZ BIOTECHNOLOGY, INC.

THAP5 siRNA (h): sc-89646

BACKGROUND

THAP5 (THAP domain containing 5) is a 395 amino acid protein that is expressed predominantly in heart with very low expression in brain and muscle. Existing as two isoforms produced by alternative splicing events, THAP5 contains one THAP-type zinc finger, a conserved DNA-binding domain. THAP5 is a specific interactor and substrate of HtrA2 in cells undergoing apoptosis. Considered a cardiac-specific nuclear protein, THAP5 is downregulated in the myocardial infarction area in patients with coronary artery disease, suggesting a role in heart disease. THAP5 exists as two isoforms that are produced by alternative splicing events. The gene encoding THAP5 maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

1. Roussigne, M., et al. 2003. THAP1 is a nuclear proapoptotic factor that links prostate-apoptosis-response-4 (PAR-4) to PML nuclear bodies. Oncogene 22: 2432-2442.
2. Roussigne, M., et al 2003. The THAP domain: a novel protein motif with similarity to the DNA-binding domain of P element transposase. Trends Biochem. Sci. 28: 66-69.
3. Macfarlan, T., et al. 2005. Human THAP7 is a chromatin-associated, histone tail-binding protein that represses transcription via recruitment of HDAC3 and nuclear hormone receptor corepressor. J. Biol. Chem. 280: 7346-7358.
4. Clouaire, T., et al. 2005. The THAP domain of THAP1 is a large C2CH module with zinc-dependent sequence-specific DNA-binding activity. Proc. Natl. Acad. Sci. USA 102: 6907-6912.
5. Ben-Naim, O., et al. 2006. The CCAAT binding factor can mediate interactions between CONSTANS-like proteins and DNA. Plant J. 46: 462-476.
6. Bessière, D., et al. 2008. Structure-function analysis of the THAP zinc finger of THAP1, a large C2CH DNA-binding module linked to Rb/E2F pathways. J. Biol. Chem. 283: 4352-4363.

CHROMOSOMAL LOCATION

Genetic locus: THAP5 (human) mapping to 7q31.1.

PRODUCT

THAP5 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 THAP5 shRNA Plasmid (h): sc-89646-SH and THAP5 shRNA (h) Lentiviral Particles: sc-89646-V as alternate gene silencing products.

For independent verification of THAP5 (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-89646A, sc-89646B and sc-89646C.

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

THAP5 siRNA (h) is recommended for the inhibition of THAP5 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 THAP5 gene expression knockdown using RT-PCR Primer: THAP5 (h)-PR: sc-89646-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.