SANTA CRUZ BIOTECHNOLOGY, INC.

Tβ-15a siRNA (h): sc-62664

BACKGROUND

β-thymosins are a family of small, water-soluble peptides. They are molecules with multiple and diverse intracellular and extracellular functions. β-thymosins are known for binding G-Actin and disturbing the assembly of F-Actin. Tβ-15a (TMSB15A), also designated neuroblastoma thymosin β (NB Tβ), or thymosin-like protein 8, is significantly similar to its family members thmyosin-β15b (Tβ-15b), thmyosin-β4 (Tβ-4) and thymosin-β10 (Tβ-10). Tβ-15a is a 44 amino acid protein expressed in neuroblastomas that localizes to the cytoplasm. It interacts with G-Actin and is involved in tissue invasion, cell growth and cell motility. Interference of Tβ-15a expression has been shown to decrease cell invasion. Tβ-15a may play a role in tumor development and progression. A newly described isoform of thmyosin-β15, Tβ-15b is transcribed from a different gene (TMSB15B) and encodes a protein identical to Tβ-15a. The two gene isoforms are subject to different transcriptional regulation and have distinct expression.

REFERENCES

1. Yokoyama, M., et al. 1996. Identification and cloning of neuroblastoma-specific and nerve tissue-specific genes through compiled expression profiles. DNA Res. 3: 311-320.
2. Kobayashi, T., et al. 2002. Thymosin-β4 regulates motility and metastasis of malignant mouse fibrosarcoma cells. Am. J. Pathol. 160: 869-882.
3. Mamoune, A., et al. 2003. Calpain-2 as a target for limiting prostate cancer invasion. Cancer Res. 63: 4632-4640.
4. Huber, E., et al. 2004. Gene profiling of cottontail rabbit papillomavirus-induced carcinomas identifies upregulated genes directly involved in stroma invasion as shown by small interfering RNA-mediated gene silencing. J. Virol. 78: 7478-7489.
5. Chen, C., et al. 2005. Roles of thymosins in cancers and other organ systems. World J. Surg. 29: 264-270.
6. Schmidt, M., et al. 2006. Differential gene expression in a paclitaxel-resistant clone of a head and neck cancer cell line. Eur. Arch. Otorhinolaryngol. 263: 127-134.

CHROMOSOMAL LOCATION

Genetic locus: TMSB15A (human) mapping to Xq22.1.

PRODUCT

Tβ-15a 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 Tβ-15a shRNA Plasmid (h): sc-62664-SH and Tβ-15a shRNA (h) Lentiviral Particles: sc-62664-V as alternate gene silencing products.

For independent verification of Tβ-15a (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-62664A, sc-62664B and sc-62664C.

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

Tβ-15a siRNA (h) is recommended for the inhibition of Tβ-15a 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.

GENE EXPRESSION MONITORING

Tβ-15a/b (B-4): sc-271649 is recommended as a control antibody for monitoring of Tβ-15a gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Tβ-15a gene expression knockdown using RT-PCR Primer: Tβ-15a (h)-PR: sc-62664-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.