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## Produktinformation



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Diagnostik & molekulare Diagnostik



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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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# T $\beta$ -4 siRNA (m): sc-45217

## BACKGROUND

Proteins in the thymosin  $\beta$  family are highly conserved polar peptides that bind monomeric Actin and thereby inhibit Actin polymerization. These proteins act as the main intracellular G-Actin sequestering peptides. The most abundant thymosin  $\beta$  family member in mammalian cells and tissues is thymosin  $\beta$ -4 (T $\beta$ -4, also designated Seraspenide). T $\beta$ -4 participates in several cellular events including cancerogenesis, apoptosis, angiogenesis, blood coagulation and wound healing. Specifically, T $\beta$ -4 promotes cell migration and adhesion, accelerates healing, reduces inflammation and becomes upregulated in a wide variety of human carcinomas. Due to the effects of T $\beta$ -4 in these events, it may become a protein of significant biological and pharmaceutical relevance.

## REFERENCES

- Huff, T., et al. 2001.  $\beta$ -thymosins, small acidic peptides with multiple functions. *Int. J. Biochem. Cell Biol.* 33: 205-220.
- Philp, D., et al. 2003. The Actin binding site on thymosin  $\beta$ -4 promotes angiogenesis. *FASEB J.* 17: 2103-2105.
- Bock-Marquette, I., et al. 2004. Thymosin  $\beta$ -4 activates integrin-linked kinase and promotes cardiac cell migration, survival and cardiac repair. *Nature* 432: 466-472.
- Huff, T., et al. 2004. Nuclear localisation of the G-Actin sequestering peptide thymosin  $\beta$ -4. *J. Cell. Sci.* 117: 5333-5341.
- Gibbons, D.L., et al. 2004. A comparative analysis of RNA targeting strategies in the thymosin  $\beta$ -4 gene. *J. Mol. Biol.* 342: 1069-1076.
- Wang, W.S., et al. 2004. Overexpression of the thymosin  $\beta$ -4 gene is associated with increased invasion of SW480 colon carcinoma cells and the distant metastasis of human colorectal carcinoma. *Oncogene* 23: 6666-6671.

## CHROMOSOMAL LOCATION

Genetic locus: Tmsb4x (mouse) mapping to X F5.

## PRODUCT

T $\beta$ -4 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see T $\beta$ -4 shRNA Plasmid (m): sc-45217-SH and T $\beta$ -4 shRNA (m) Lentiviral Particles: sc-45217-V as alternate gene silencing products.

For independent verification of T $\beta$ -4 (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-45217A, sc-45217B and sc-45217C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

T $\beta$ -4 siRNA (m) is recommended for the inhibition of T $\beta$ -4 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  $\mu$ M in 66  $\mu$ l. 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

T $\beta$ -4 (4H7): sc-293251 is recommended as a control antibody for monitoring of T $\beta$ -4 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 T $\beta$ -4 gene expression knockdown using RT-PCR Primer: T $\beta$ -4 (m)-PR: sc-45217-PR (20  $\mu$ l, 365 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.