

# T $\beta$ -4 (4H7): sc-293251

## 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 wound healing and 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 (human) mapping to Xp22.2.

## SOURCE

T $\beta$ -4 (4H7) is a mouse monoclonal antibody raised against amino acids 1-44 of T $\beta$ -4 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

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

## APPLICATIONS

T $\beta$ -4 (4H7) is recommended for detection of T $\beta$ -4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

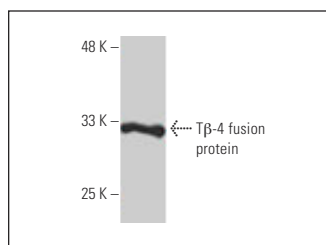
Suitable for use as control antibody for T $\beta$ -4 siRNA (m): sc-45217, T $\beta$ -4 shRNA Plasmid (m): sc-45217-SH and T $\beta$ -4 shRNA (m) Lentiviral Particles: sc-45217-V.

Molecular Weight of T $\beta$ -4: 5 kDa.

## RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



T $\beta$ -4 (4H7): sc-293251. Western blot analysis of human recombinant T $\beta$ -4 fusion protein.

## RESEARCH USE

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