SANTA CRUZ BIOTECHNOLOGY, INC.

Tβ-10 (FL-44): sc-50493

BACKGROUND

Thymosin β-10 (Tβ-10) is a member of the highly conserved β-thymosin family. It is a monomeric G-actin sequestering protein of the cytoplasm that regulates actin dynamics. Tβ-10 consists of 43 amino acids and often forms α-helical structures. Tβ-10 has been shown to act as an actin-mediated tumor suppressor. Overexpression of this protein inhibits endothelial cell proliferation, migration, invasion and tube formation. In human ovarian cancer cells, Tβ-10 also increases apoptosis frequency. Tβ-10 directly interacts with Ras, resulting in inhibition of the Ras downstream signaling pathways which, in turn, exhibits a negative effect on angiogenesis and tumor growth. More specifically, this inhibitive effect might be mediated by the downregulation of vascular endothelial growth factor (VEGF), VEGF receptor-1 (VEGFR-1) and Integrin αV, which suggests a role for Tβ-10 in anticancer therapy.

REFERENCES

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2. Alldinger, I., et al. 2005. Gene expression analysis of pancreatic cell lines reveals genes overexpressed in pancreatic cancer. Pancreatology 5: 370-379.
3. Meeuwsen, S., et al. 2005. Cultured human adult microglia from different donors display stable cytokine, chemokine and growth factor gene profiles but respond differently to a pro-inflammatory stimulus. Neuroimmunomodulation 12: 235-245.
4. Lee, S.H., et al. 2005. Thymosin β-10 inhibits angiogenesis and tumor growth by interfering with Ras function. Cancer Res. 65: 137-148.
5. Rho, S.B., et al. 2005. The identification of apoptosis-related residues in human thymosin β-10 by mutational analysis and computational modeling. J. Biol. Chem. 280: 34003-34007.
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8. Tsuji, M., et al. 2006. Microarray analysis of a reversible model and an irreversible model of anti-Thy-1 nephritis. Kidney Int. 69: 996-1004.
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CHROMOSOMAL LOCATION

Genetic locus: TMSB10 (human) mapping to 2p11.2, TMSB4X (human) mapping to 2p11.2; Tmsb10 (mouse) mapping to 6 C1, Tmsb4x (mouse) mapping to X F5.

SOURCE

Tβ-10 (FL-44) is a rabbit polyclonal antibody raised against amino acids 1-44 representing full length Tβ-10 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Tβ-10 (FL-44) is recommended for detection of Tβ-10, and to a lesser extent, Tβ-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Tβ-10 (FL-44) is also recommended for detection of Tβ-10 and to a lesser extent Tβ-4 in additional species, including equine and canine.

Molecular Weight of Tβ-10: 5 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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