SANTA CRUZ BIOTECHNOLOGY, INC.

Tβ-15a/b (B-4): sc-271649

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.

CHROMOSOMAL LOCATION

Genetic locus: TMSB15A (human) mapping to Xq22.1, TMSB15B (human) mapping to Xq22.2; Tmsb15a/Tmsb15b1 (mouse) mapping to X F1.

SOURCE

Tβ-15a/b (B-4) is a mouse monoclonal antibody raised against amino acids 1-45 representing full length Tβ-15a of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Tβ-15a/b (B-4) is available conjugated to agarose (sc-271649 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271649 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271649 PE), fluorescein (sc-271649 FITC), Alexa Fluor® 488 (sc-271649 AF488), Alexa Fluor® 546 (sc-271649 AF546), Alexa Fluor® 594 (sc-271649 AF594) or Alexa Fluor® 647 (sc-271649 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271649 AF680) or Alexa Fluor® 790 (sc-271649 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Tβ-15a/b (B-4) is recommended for detection of Tβ-15a and Tβ-15b of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

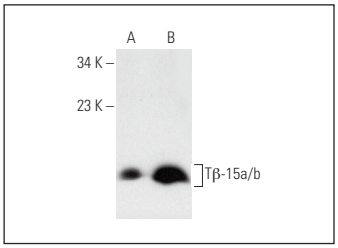
Molecular Weight of Tβ-15a/b: 5 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or SK-N-SH cell lysate: sc-2410.

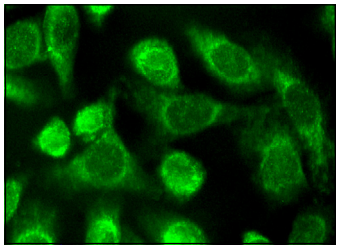
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Tβ-15a/b (B-4): sc-271649. Western blot analysis of Tβ-15a/b expression in IMR-32 (**A**) and SK-N-SH (**B**) whole cell lysates.



Tβ-15a/b (B-4): sc-271649. Immunofluorescence staining of formalin-fixed SW480 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Tao, N., et al. 2024. Th22 is the effector cell of thymosin β15-induced hair regeneration in mice. Inflamm. Regen. 44: 3.

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 for detailed protocols and support products.