SANTA CRUZ BIOTECHNOLOGY, INC.

PA28β (A8): sc-100799



BACKGROUND

PA28 is an interferon- γ (IFN- γ) inducible proteasome activator required for presentation of certain major histocompatibility (MHC) class I antigens. The PA28 complex is composed of two homologous subunits, α and β , which have similar catalytic properties and associate to form a hexameric ring. PA28 α and PA28 β , form a heteropolymer that binds to both ends of the 20S Proteasome. In the mouse genome, two different chromosomal loci exist for PA28 β , both of which are transcribed and encode a functional PA28 β subunit. PA28 β , for proteasome activator 28 β , is also known as PSME2, REG- β and proteasome (prosome, macropain) activator subunit 2. PA28 β is a strong proteasome activator, although its affinity for the proteasome is about ten-fold less than recombinant PA28 α . The PA28 complex is expressed constitutively in antigenpresenting cells. Downregulation of PA28 results in abnormal proteasome activation and has been implicated in the development of intimal hyperplasia (IH) in animal models.

REFERENCES

- 1. Kohda, K., et al. 1998. Characterization of the mouse PA28 activator complex gene family: complete organizations of the three member genes and a physical map of the approximately 150 kb region containing the α and β subunit genes. J. Immunol. 160: 4923-4935.
- 2. Zaiss, D.M. and Kloetzel, P.M. 1999. A second gene encoding the mouse proteasome activator PA28 β subunit is part of a LINE1 element and is driven by a LINE1 promoter. J. Mol. Biol. 287: 829-835.
- 3. Wilk, S., et al. 2000. Properties of the β subunit of the proteasome activator PA28 (11S REG). Arch. Biochem. Biophys. 384: 74-180.
- Fabunmi, R.P., et al. 2001. Interferon-γ regulates accumulation of the proteasome activator PA28 and immunoproteasomes at nuclear PML bodies. J. Cell Sci. 114: 29-36.
- Faries, P.L., et al. 2001. Relationship of the 20S proteasome and the proteasome activator PA28 to atherosclerosis and intimal hyperplasia in the human vascular system. Ann. Vasc. Surg. 15: 628-633.
- Murata, S., et al. 2001. Immunoproteasome assembly and antigen presentation in mice lacking both PA28α and PA28β. EMBO J. 20: 5898-5907.

CHROMOSOMAL LOCATION

Genetic locus: PSME2 (human) mapping to 14q12.

SOURCE

 $PA28\beta$ (A8) is a mouse monoclonal antibody raised against recombinant $PA28\beta$ of human origin.

PRODUCT

Each vial contains 100 μg lgG_{2a} 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.

APPLICATIONS

PA28β (A8) is recommended for detection of PA28β of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PA28 β siRNA (h): sc-40798, PA28 β shRNA Plasmid (h): sc-40798-SH and PA28 β shRNA (h) Lentiviral Particles: sc-40798-V.

Molecular Weight of PA286: 28 kDa.

Positive Controls: PA28 β (h): 293T Lysate: sc-114006, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.







 $PA28\beta$ (A8): sc-100799. Western blot analysis of $PA28\beta$ expression in non-transfected: sc-117752 (A) and human $PA28\beta$ transfected: sc-114006 (B) 293T whole cell lysates.

 $PA28\beta$ (A8): sc-100799. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human stomach carcinoma tissue showing nuclear localization.

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.