SANTA CRUZ BIOTECHNOLOGY, INC.

PA28β (G-10): sc-390563

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. PA28α and PA28β, form a heteropolymer that binds to both ends of the 20S Proteasome. In the mouse genome, two different chromosomal loci exist for PA28β, both of which are transcribed and encode a functional PA28β subunit. PA28β, for proteasome activator 28β, is also known as PSME2, REG-β and proteasome (prosome, macropain) activator subunit 2. PA28β is a strong proteasome activator, although its affinity for the proteasome is about ten-fold less than recombinant PA28α. The PA28 complex is expressed constitutively in antigen-presenting 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 PA28β 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: 174-180.
4. 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.

CHROMOSOMAL LOCATION

Genetic locus: PSME2 (human) mapping to 14q12; Psme2 (mouse) mapping to 14 C3.

SOURCE

PA28β (G-10) is a mouse monoclonal antibody raised against amino acids 176-239 mapping at the C-terminus of PA28β of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PA28β (G-10) is available conjugated to agarose (sc-390563 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390563 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390563 PE), fluorescein (sc-390563 FITC), Alexa Fluor® 488 (sc-390563 AF488), Alexa Fluor® 546 (sc-390563 AF546), Alexa Fluor® 594 (sc-390563 AF594) or Alexa Fluor® 647 (sc-390563 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390563 AF680) or Alexa Fluor® 790 (sc-390563 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PA28β (G-10) is recommended for detection of PA28β 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), 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).

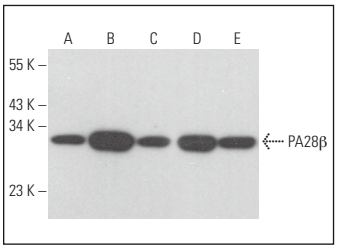
PA28β (G-10) is also recommended for detection of PA28β in additional species, including equine.

Suitable for use as control antibody for PA28β siRNA (h): sc-40798, PA28β siRNA (m): sc-40799, PA28β shRNA Plasmid (h): sc-40798-SH, PA28β shRNA Plasmid (m): sc-40799-SH, PA28β shRNA (h) Lentiviral Particles: sc-40798-V and PA28β shRNA (m) Lentiviral Particles: sc-40799-V.

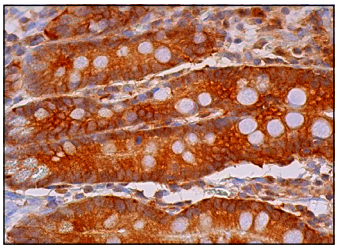
Molecular Weight of PA28β: 28 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or Hep G2 cell lysate: sc-2227.

DATA



PA28β (G-10): sc-390563. Western blot analysis of PA28β expression in HeLa (**A**), Hep G2 (**B**), MCF7 (**C**), 3T3-L1 (**D**) and PC-12 (**E**) whole cell lysates.



PA28β (G-10): sc-390563. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Qu, Z. and D'Mello, S.R. 2018. Proteomic analysis identifies NPTX1 and HIP1R as potential targets of histone deacetylase-3-mediated neurodegeneration. Exp. Biol. Med. 243: 627-638.
2. Pecori, F., et al. 2021. Site-specific O-GlcNAcylation of Psme3 maintains mouse stem cell pluripotency by impairing P-body homeostasis. Cell Rep. 36: 109361.

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.