SANTA CRUZ BIOTECHNOLOGY, INC.

PSMC3 (28-K): sc-100462

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In eukaryotic cells, selective breakdown of cellular proteins is ensured by their ubiquitination and subsequent degradation by the 26S Proteasome. The 26S Proteasome is a protease complex that selectively breaks down proteins that have been modified by polyubiquitin chains. It is made up of two multi-subunit complexes: the 20S Proteasome chamber, which serves as the proteolytic core of the complex, and two 19S regulatory particles which recognize and unfold ubiquitinated proteins. PSMC3 (Proteasome 26S subunit ATPase 3), also known as TBP1 (Tat-binding protein 1), is a 439 amino acid member of the AAA ATPase family. Localized to both the nucleus and the cytoplasm, PSMC3 functions as a subunit of the 19S regulatory complex and is involved in regulating the substrate specificity of the 26S Proteasome. Additionally, PSMC3 interacts with the HIV protein HIV-1 Tat and, via this interaction, mediates the association of the viral protein with transcription complexes.

REFERENCES

1. Hoyle, J., et al. 1997. Localization of genes encoding two human one-domain members of the AAA family: PSMC5 (the thyroid hormone receptor-interacting protein, TRIP1) and PSMC3 (the Tat-binding protein, TBP1). Hum. Genet. 99: 285-288.
2. Tanahashi, N., et al. 1998. Chromosomal localization and immunological analysis of a family of human 26S proteasomal ATPases. Biochem. Biophys. Res. Commun. 243: 229-232.
3. Conticello, S.G., et al. 2003. The Vif protein of HIV triggers degradation of the human antiretroviral DNA deaminase APOBEC3G. Curr. Biol. 13: 2009-2013.
4. Apcher, G.S., et al. 2003. Human immunodeficiency virus-1 Tat protein interacts with distinct proteasomal α and β subunits. FEBS Lett. 553: 200-204.
5. Shindo, K., et al. 2003. The enzymatic activity of CEM15/Apobec-3G is essential for the regulation of the infectivity of HIV-1 virion but not a sole determinant of its antiviral activity. J. Biol. Chem. 278: 44412-44416.

CHROMOSOMAL LOCATION

Genetic locus: PSMC3 (human) mapping to 11p11.2; Psmc3 (mouse) mapping to 2 E1.

SOURCE

PSMC3 (28-K) is a mouse monoclonal antibody raised against recombinant PSMC3 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 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

PSMC3 (28-K) is recommended for detection of PSMC3 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PSMC3 siRNA (h): sc-76275, PSMC3 siRNA (m): sc-76276, PSMC3 shRNA Plasmid (h): sc-76275-SH, PSMC3 shRNA Plasmid (m): sc-76276-SH, PSMC3 shRNA (h) Lentiviral Particles: sc-76275-V and PSMC3 shRNA (m) Lentiviral Particles: sc-76276-V.

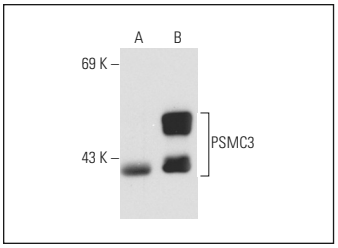
Molecular Weight of PSMC3: 49 kDa.

Positive Controls: PSMC3 (h): 293T Lysate: sc-173028 or HeLa whole cell lysate: sc-2200.

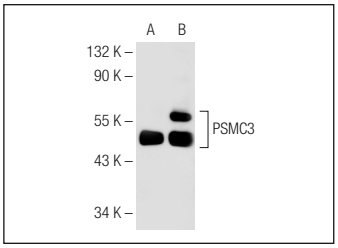
RECOMMENDED SUPPORT REAGENTS

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).

DATA



PSMC3 (28-K): sc-100462. Western blot analysis of PSMC3 expression in non-transfected: sc-117752 (**A**) and human PSMC3 transfected: sc-173266 (**B**) 293T whole cell lysates.



PSMC3 (28-K): sc-100462. Western blot analysis of PSMC3 expression in non-transfected: sc-117752 (**A**) and human PSMC3 transfected: sc-173028 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wang, T., et al. 2022. Novel compound C150 inhibits pancreatic cancer through induction of ER stress and proteosome assembly. Front. Oncol. 12: 870473.

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.