SANTA CRUZ BIOTECHNOLOGY, INC.

PSMC4 (G-4): sc-166115

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. At specific stages of development, embryo- and tissue-specific components of the 26S Proteasome are formed, which are responsible for proteolysis. These components of the 26S Proteasome include Rpn10α through Rpn10ε, or, alternatively, pUb-R2 through pUb-R5, and can be generated by a single Rpn10 gene by developmentally regulated alternative splicing. Gankyrin and p44S10 are proteasome regulatory particles that are expressed in heart, liver, skeletal muscle and pancreas. Proteasome component C_2 (PROS-30), also designated macropain subunit C_2, is a prosomal protein involved in a non-lysosomal ATP/ubiquitin-dependent proteolytic pathway. PSMC4 (26S protease regulatory subunit 6B) is involved in the ATP-dependent degradation of ubiquitinated proteins. PSMC4 interacts with with gankyrin, a liver oncoprotein, as well as with a liver-specific member of the nuclear hormone receptor superfamily.

REFERENCES

1. Dubiel, W., et al. 1994. Tat-binding protein 7 is a subunit of the 26S protease. Biol. Chem. Hoppe-Seyler 375: 237-240.
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. Sakao, Y., et al. 2000. Mouse proteasomal ATPases PSMC3 and PSMC4: genomic organization and gene targeting. Genomics 67: 1-7.
4. Rhodes, D.R., et al. 2004. Large-scale meta-analysis of cancer microarray data identifies common transcriptional profiles of neoplastic transformation and progression. Proc. Natl. Acad. Sci. USA 101: 9309-9314.
5. Szabo, A., et al. 2004. Statistical modeling for selecting housekeeper genes. Genome Biol. 5: R59.

CHROMOSOMAL LOCATION

Genetic locus: PSMC4 (human) mapping to 19q13.2; Psmc4 (mouse) mapping to 7 A3.

SOURCE

PSMC4 (G-4) is a mouse monoclonal antibody raised against amino acids 1-167 mapping at the N-terminus of PSMC4 of human origin.

PRODUCT

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

PSMC4 (G-4) is available conjugated to agarose (sc-166115 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166115 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166115 PE), fluorescein (sc-166115 FITC), Alexa Fluor® 488 (sc-166115 AF488), Alexa Fluor® 546 (sc-166115 AF546), Alexa Fluor® 594 (sc-166115 AF594) or Alexa Fluor® 647 (sc-166115 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166115 AF680) or Alexa Fluor® 790 (sc-166115 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

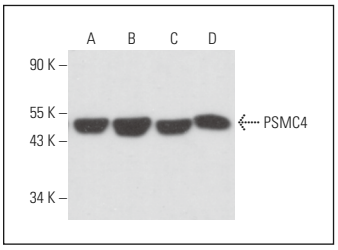
PSMC4 (G-4) is recommended for detection of PSMC4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for PSMC4 siRNA (h): sc-45851, PSMC4 siRNA (m): sc-45852, PSMC4 shRNA Plasmid (h): sc-45851-SH, PSMC4 shRNA Plasmid (m): sc-45852-SH, PSMC4 shRNA (h) Lentiviral Particles: sc-45851-V and PSMC4 shRNA (m) Lentiviral Particles: sc-45852-V.

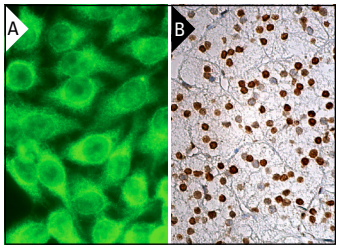
Molecular Weight of PSMC4: 47 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, NIH/3T3 whole cell lysate: sc-2210 or ES-2 cell lysate: sc-24674.

DATA



PSMC4 (G-4): sc-166115. Western blot analysis of PSMC4 expression in MIA PaCa-2 (**A**), NIH/3T3 (**B**), PC-12 (**C**) and ES-2 (**D**) whole cell lysates.



PSMC4 (G-4): sc-166115. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Song, X., et al. 2020. Baicalin combats glutamate excitotoxicity via protecting glutamine synthetase from ROS-induced 20S proteasomal degradation. Redox Biol. 34: 101559.
2. Wang, T., et al. 2022. Novel compound C150 inhibits pancreatic cancer through induction of ER stress and proteosome assembly. Front. Oncol. 12: 870473.
3. Al Rawi, S., et al. 2024. Study of an FBXO7 patient mutation reveals Fbxo7 and PI31 co-regulate proteasomes and mitochondria. FEBS J. 291: 2565-2589.

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.