

# PSMB4 (H-3): sc-390878

## 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 multisubunit 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. The 20S Proteasome chamber contains  $\alpha$  subunits (which are structural) and  $\beta$  subunits (which are predominantly catalytic). The outer two rings in the proteasome consist of seven  $\alpha$  subunits each, and the inner two rings each consist of seven  $\beta$  subunits. PSMB4 (proteasome (prosome, macropain) subunit,  $\beta$  type, 4), also known as HN3, PROS26, macropain  $\beta$  chain, proteasome  $\beta$  chain or proteasome subunit 3, is a  $\beta$  subunit of the 20S Proteasome.

## REFERENCES

- McCusker, D., et al. 1997. Genetic relationships of the genes encoding the human proteasome  $\beta$  subunits and the proteasome PA28 complex. *Genomics* 45: 362-367.
- Orlowski, M., et al. 1997. Reactions of [14C]-3,4-dichloroisocoumarin with subunits of pituitary and spleen multicatalytic proteinase complexes (proteasomes). *Biochemistry* 36: 13946-13953.

## CHROMOSOMAL LOCATION

Genetic locus: PSMB4 (human) mapping to 1q21.3; Psmb4 (mouse) mapping to 3 F2.1.

## SOURCE

PSMB4 (H-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 245-262 at the C-terminus of PSMB4 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PSMB4 (H-3) is available conjugated to agarose (sc-390878 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390878 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390878 PE), fluorescein (sc-390878 FITC), Alexa Fluor® 488 (sc-390878 AF488), Alexa Fluor® 546 (sc-390878 AF546), Alexa Fluor® 594 (sc-390878 AF594) or Alexa Fluor® 647 (sc-390878 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390878 AF680) or Alexa Fluor® 790 (sc-390878 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390878 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

PSMB4 (H-3) is recommended for detection of PSMB4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

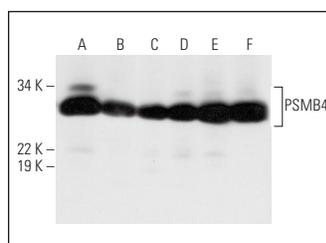
PSMB4 (H-3) is also recommended for detection of PSMB4 in additional species, including bovine.

Suitable for use as control antibody for PSMB4 siRNA (h): sc-76269, PSMB4 siRNA (m): sc-76270, PSMB4 shRNA Plasmid (h): sc-76269-SH, PSMB4 shRNA Plasmid (m): sc-76270-SH, PSMB4 shRNA (h) Lentiviral Particles: sc-76269-V and PSMB4 shRNA (m) Lentiviral Particles: sc-76270-V.

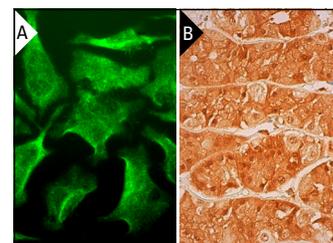
Molecular Weight of PSMB4: 29 kDa.

Positive Controls: human liver extract: sc-363766, A-431 whole cell lysate: sc-2201 or HeLa whole cell lysate: sc-2200.

## DATA



PSMB4 (H-3): sc-390878. Western blot analysis of PSMB4 expression in HeLa (A), A-431 (B), RT-4 (C) and U-251-MG (D) whole cell lysates and human liver (E) and human tonsil (F) tissue extracts.



PSMB4 (H-3): sc-390878. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic and nuclear staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

- Zhang, X., et al. 2017. Proteasome  $\beta$ -4 subunit contributes to the development of melanoma and is regulated by miR-148b. *Tumour Biol.* 39: 1010428317705767.
- Yang, C., et al. 2021. PSMB4 inhibits cardiomyocyte apoptosis via activating NF $\kappa$ B signaling pathway during myocardial ischemia/reperfusion injury. *J. Mol. Histol.* 52: 693-703.
- Kotschi, S., et al. 2022. NFE2L1-mediated proteasome function protects from ferroptosis. *Mol. Metab.* 57: 101436.
- Song, J., et al. 2023. PTIR1 acts as an isoform of DDX58 and promotes tumor immune resistance through activation of UCHL5. *Cell Rep.* 42: 113388.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.