

# 20S Proteasome $\beta$ 7 (H-3): sc-365725

## BACKGROUND

The proteasome represents a large protein complex that exists inside all eukaryotes and archaea, and in some bacteria. The main function of proteasomes is to degrade unnecessary or damaged proteins by proteolysis. The most common form of the proteasome, known as the 26S Proteasome, contains one 20S Proteasome core particle structure and two 19S regulatory caps. The 20S Proteasome core is hollow and forms an enclosed cavity, where proteins are degraded, as well as openings at the two ends to allow the target protein to enter. The 20S Proteasome core particle contains many subunits, depending on the organism. All of the subunits fall into one of two types:  $\alpha$  subunits, which are structural, serve as docking domains for the regulatory particles and exterior gates blocking unregulated access to the interior cavity; or  $\beta$  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.

## REFERENCES

1. Kristensen, P., et al. 1994. Human proteasome subunits from two-dimensional gels identified by partial sequencing. *Biochem. Biophys. Res. Commun.* 205: 1785-1789.
2. Morimoto, Y., et al. 1995. Ordered structure of the crystallized bovine 20S Proteasome. *J. Biochem.* 117: 471-474.
3. Wenzel, T., et al. 1995. Conformational constraints in protein degradation by the 20S Proteasome. *Nat. Struct. Biol.* 2: 199-204.
4. Schmidt, M., et al. 1997. Structure and structure formation of the 20S Proteasome. *Mol. Biol. Rep.* 24: 103-112.
5. Sassa, H., et al. 2000. Primary structural features of the 20S Proteasome subunits of rice (*Oryza sativa*). *Gene* 250: 61-66.

## CHROMOSOMAL LOCATION

Genetic locus: PSMB7 (human) mapping to 9q33.3; Psmb7 (mouse) mapping to 2 B.

## SOURCE

20S Proteasome  $\beta$ 7 (H-3) is a mouse monoclonal antibody raised against amino acids 146-252 mapping within an internal region of 20S Proteasome  $\beta$ 7 of human origin.

## PRODUCT

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

20S Proteasome  $\beta$ 7 (H-3) is available conjugated to agarose (sc-365725 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365725 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365725 PE), fluorescein (sc-365725 FITC), Alexa Fluor® 488 (sc-365725 AF488), Alexa Fluor® 546 (sc-365725 AF546), Alexa Fluor® 594 (sc-365725 AF594) or Alexa Fluor® 647 (sc-365725 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365725 AF680) or Alexa Fluor® 790 (sc-365725 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

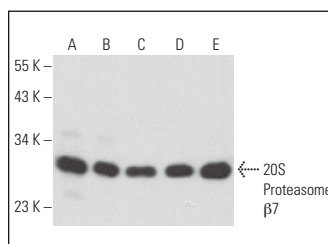
20S Proteasome  $\beta$ 7 (H-3) is recommended for detection of 20S Proteasome  $\beta$ 7 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for 20S Proteasome  $\beta$ 7 siRNA (h): sc-62874, 20S Proteasome  $\beta$ 7 siRNA (m): sc-62875, 20S Proteasome  $\beta$ 7 shRNA Plasmid (h): sc-62874-SH, 20S Proteasome  $\beta$ 7 shRNA Plasmid (m): sc-62875-SH, 20S Proteasome  $\beta$ 7 shRNA (h) Lentiviral Particles: sc-62874-V and 20S Proteasome  $\beta$ 7 shRNA (m) Lentiviral Particles: sc-62875-V.

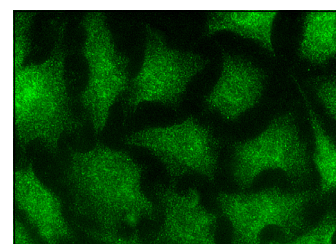
Molecular Weight of 20S Proteasome  $\beta$ 7: 30 kDa.

Positive Controls: F9 cell lysate: sc-2245, HeLa whole cell lysate: sc-2200 or WI-38 whole cell lysate: sc-364260.

## DATA



20S Proteasome  $\beta$ 7 (H-3): sc-365725. Western blot analysis of 20S Proteasome  $\beta$ 7 expression in HeLa (A), WI-38 (B), AMJ2-C8 (C), F9 (D) and KNRK (E) whole cell lysates.



20S Proteasome  $\beta$ 7 (H-3): sc-365725. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

## SELECT PRODUCT CITATIONS

1. Xylaki, M., et al. 2020. Changes in the cellular fatty acid profile drive the proteasomal degradation of  $\alpha$ -synuclein and enhance neuronal survival. *FASEB J.* 34: 15123-15145.
2. Vdovin, A., et al. 2022. The deubiquitinase OTUD1 regulates immunoglobulin production and proteasome inhibitor sensitivity in multiple myeloma. *Nat. Commun.* 13: 6820.
3. Luo, H., et al. 2023. Combinations of ivermectin with proteasome inhibitors induce synergistic lethality in multiple myeloma. *Cancer Lett.* 565: 216218.

## 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.

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