

# 20S Proteasome $\beta$ 1 (FL-241): sc-67345

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: PSMB1 (human) mapping to 6q27; Psmb1 (mouse) mapping to 17 A2.

## SOURCE

20S Proteasome  $\beta$ 1 (FL-241) is a rabbit polyclonal antibody raised against amino acids 1-241 representing full length 20S Proteasome  $\beta$ 1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

20S Proteasome  $\beta$ 1 (FL-241) is recommended for detection of 20S Proteasome  $\beta$ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

20S Proteasome  $\beta$ 1 (FL-241) is also recommended for detection of 20S Proteasome  $\beta$ 1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for 20S Proteasome  $\beta$ 1 siRNA (h): sc-62864, 20S Proteasome  $\beta$ 1 siRNA (m): sc-62865, 20S Proteasome  $\beta$ 1 shRNA Plasmid (h): sc-62864-SH, 20S Proteasome  $\beta$ 1 shRNA Plasmid (m): sc-62865-SH, 20S Proteasome  $\beta$ 1 shRNA (h) Lentiviral Particles: sc-62864-V and 20S Proteasome  $\beta$ 1 shRNA (m) Lentiviral Particles: sc-62865-V.

Molecular Weight of 20S Proteasome  $\beta$ 1: 25 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or JAR cell lysate: sc-2276.

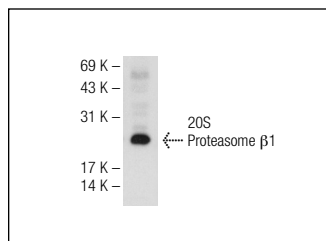
## RESEARCH USE

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

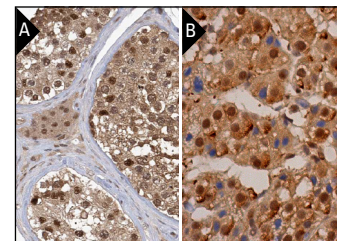
## STORAGE

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

## DATA



20S Proteasome  $\beta$ 1 (FL-241): sc-67345. Western blot analysis of 20S Proteasome  $\beta$ 1 expression in HeLa whole cell lysate.



20S Proteasome  $\beta$ 1 (FL-241): sc-67345. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis showing nuclear and cytoplasmic staining of cells in seminiferous ducts & Leydig cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic and nuclear staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

- Pickering, A.M., et al. 2010. The immunoproteasome, the 20S proteasome and the PA28 $\alpha\beta$  proteasome regulator are oxidative-stress-adaptive proteolytic complexes. *Biochem. J.* 432: 585-594.
- Schaedler, S., et al. 2010. Hepatitis B virus induces expression of antioxidant response element-regulated genes by activation of Nrf2. *J. Biol. Chem.* 285: 41074-41086.
- Carmignac, V., et al. 2011. Proteasome inhibition improves the muscle of laminin  $\alpha$ 2 chain-deficient mice. *Hum. Mol. Genet.* 20: 541-552.
- Boncela, J., et al. 2011. Association of plasminogen activator inhibitor type 2 (PAI-2) with proteasome within endothelial cells activated with inflammatory stimuli. *J. Biol. Chem.* 286: 43164-43171.
- Pickering, A.M., et al. 2012. Nrf2-dependent induction of proteasome and Pa28 $\alpha\beta$  regulator are required for adaptation to oxidative stress. *J. Biol. Chem.* 287: 10021-10031.
- Pickering, A.M. and Davies, K.J. 2012. Differential roles of proteasome and immunoproteasome regulators Pa28 $\alpha\beta$ , Pa28 $\gamma$  and Pa200 in the degradation of oxidized proteins. *Arch. Biochem. Biophys.* 523: 181-190.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **20S Proteasome  $\beta$ 1 (D-9): sc-374405** or **20S Proteasome  $\beta$ 1 (MCP421): sc-58409**, our highly recommended monoclonal alternatives to 20S Proteasome  $\beta$ 1 (FL-241).