

# 20S Proteasome $\beta$ 2 (S-18): sc-54676

## 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. 1995. 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. and Baumeister, W. 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.
6. Ferrington, D.A. and Kappahn, R.J. 2004. Catalytic site-specific inhibition of the 20S Proteasome by 4-hydroxynonenal. *FEBS Lett.* 578: 217-223.

## CHROMOSOMAL LOCATION

Genetic locus: PSMB2 (human) mapping to 1p34.3; Psmb2 (mouse) mapping to 4 D2.2.

## SOURCE

20S Proteasome  $\beta$ 2 (S-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of 20S Proteasome  $\beta$ 2 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.

Blocking peptide available for competition studies, sc-54676 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

20S Proteasome  $\beta$ 2 (S-18) is recommended for detection of 20S Proteasome  $\beta$ 2 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).

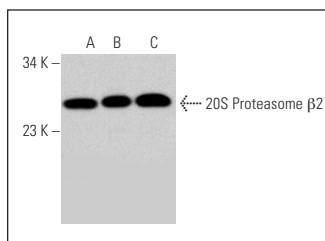
20S Proteasome  $\beta$ 2 (S-18) is also recommended for detection of 20S Proteasome  $\beta$ 2 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for 20S Proteasome  $\beta$ 2 siRNA (h): sc-62866, 20S Proteasome  $\beta$ 2 siRNA (m): sc-62867, 20S Proteasome  $\beta$ 2 shRNA Plasmid (h): sc-62866-SH, 20S Proteasome  $\beta$ 2 shRNA Plasmid (m): sc-62867-SH, 20S Proteasome  $\beta$ 2 shRNA (h) Lentiviral Particles: sc-62866-V and 20S Proteasome  $\beta$ 2 shRNA (m) Lentiviral Particles: sc-62867-V.

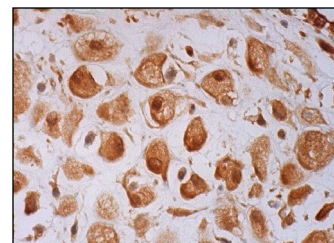
Molecular Weight of 20S Proteasome  $\beta$ 2: 23 kDa.

Positive Controls: ES-2 cell lysate: sc-24674, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

## DATA



20S Proteasome  $\beta$ 2 (S-18): sc-54676. Western blot analysis of 20S Proteasome  $\beta$ 2 expression in HeLa (A), ES-2 (B) and Jurkat (C) whole cell lysates.



20S Proteasome  $\beta$ 2 (S-18): sc-54676. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and nuclear staining of decidual cells.

## RESEARCH USE

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

## PROTOCOLS

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

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Try **20S Proteasome  $\beta$ 2 (D-8): sc-515066** or **20S Proteasome  $\beta$ 2 (MCP165): sc-58410**, our highly recommended monoclonal alternatives to 20S Proteasome  $\beta$ 2 (S-18).