

20S Proteasome β 1 (MCP421): sc-58409

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: α subunits, which are structural, serve as docking domains for the regulatory particles and exterior gates blocking unregulated access to the interior cavity; or β subunits, which are predominantly catalytic. The outer two rings in the proteasome consist of seven α subunits each, and the inner two rings each consist of seven β 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. 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 Kapphahn, R.J. 2004. Catalytic site-specific inhibition of the 20S Proteasome by 4-hydroxynonenal. *FEBS Lett.* 578: 217-223.
7. Huang, L. and Burlingame, A.L. 2006. Comprehensive mass spectrometric analysis of the 20S Proteasome complex. *Methods Enzymol.* 405: 187-236.
8. Madding, L.S., et al. 2006. Role of the β 1 subunit in the function and stability of the 20S Proteasome in the hyperthermophilic archaeon *Pyrococcus furiosus*. *J. Bacteriol.* 189: 583-590.

CHROMOSOMAL LOCATION

Genetic locus: PSMB1 (human) mapping to 6q27.

SOURCE

20S Proteasome β 1 (MCP421) is a mouse monoclonal antibody raised against dinitrophenylated proteasomes of human origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

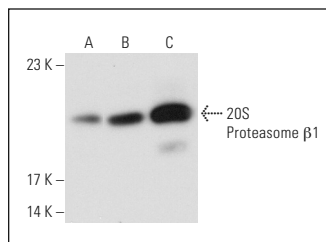
20S Proteasome β 1 (MCP421) is recommended for detection of 20S Proteasome β 1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

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

Molecular Weight of 20S Proteasome β 1: 25 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, JAR cell lysate: sc-2276 or 20S Proteasome β 1 (m): 293T Lysate: sc-117880.

DATA



20S Proteasome β 1 (MCP421): sc-58409. Western blot analysis of 20S Proteasome β 1 expression in non-transfected 293T: sc-117752 (A), mouse 20S Proteasome β 1 transfected 293T: sc-117880 (B) and Hep G2 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Thaker, N.G., et al. 2009. Identification of survival genes in human glioblastoma cells by small interfering RNA screening. *Mol. Pharmacol.* 76: 1246-1255.
2. 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.
3. Huang, Y.F., et al. 2014. Isg15 controls p53 stability and functions. *Cell Cycle* 13: 2200-2210.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.