

20S Proteasome $\alpha 2$ (B-5): sc-166512

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

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- Wenzel, T. and Baumeister, W. 1995. Conformational constraints in protein degradation by the 20S Proteasome. *Nat. Struct. Biol.* 2: 199-204.
- Schmidt, M., et al. 1997. Structure and structure formation of the 20S Proteasome. *Mol. Biol. Rep.* 24: 103-112.
- Sassa, H., et al. 2000. Primary structural features of the 20S Proteasome subunits of rice (*Oryza sativa*). *Gene* 250: 61-66.
- Ferrington, D.A. and Kapphahn, R.J. 2004. Catalytic site-specific inhibition of the 20S Proteasome by 4-hydroxynonenal. *FEBS Lett.* 578: 217-223.
- Madding, L.S., et al. 2006. Role of the $\beta 1$ 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: PSMA2 (human) mapping to 7p14.1; Psma2 (mouse) mapping to 13 A1.

SOURCE

20S Proteasome $\alpha 2$ (B-5) is a mouse monoclonal antibody raised against amino acids 1-120 mapping at the N-terminus of 20S Proteasome $\alpha 2$ of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166512 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

20S Proteasome $\alpha 2$ (B-5) is recommended for detection of 20S Proteasome $\alpha 2$ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

20S Proteasome $\alpha 2$ (B-5) is also recommended for detection of 20S Proteasome $\alpha 2$ in additional species, including canine and bovine.

Suitable for use as control antibody for 20S Proteasome $\alpha 2$ siRNA (h): sc-62876, 20S Proteasome $\alpha 2$ siRNA (m): sc-62877, 20S Proteasome $\alpha 2$ shRNA Plasmid (h): sc-62876-SH, 20S Proteasome $\alpha 2$ shRNA Plasmid (m): sc-62877-SH, 20S Proteasome $\alpha 2$ shRNA (h) Lentiviral Particles: sc-62876-V and 20S Proteasome $\alpha 2$ shRNA (m) Lentiviral Particles: sc-62877-V.

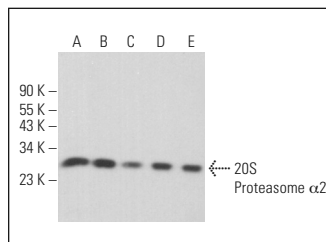
Molecular Weight of 20S Proteasome $\alpha 2$: 26 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or WI-38 whole cell lysate: sc-364260.

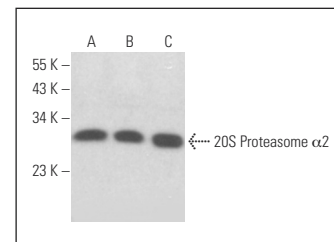
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



20S Proteasome $\alpha 2$ (B-5): sc-166512. Western blot analysis of 20S Proteasome $\alpha 2$ expression in HeLa (A), Jurkat (B), Ca Ski (C), AMJ2-C8 (D) and MH-S (E) whole cell lysates.



20S Proteasome $\alpha 2$ (B-5): sc-166512. Western blot analysis of 20S Proteasome $\alpha 2$ expression in HeLa (A), WI-38 (B) and MES-SA/Dx5 (C) whole cell lysates.

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.