

20S Proteasome $\alpha 2$ (B-4): sc-377148

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.

CHROMOSOMAL LOCATION

Genetic locus: PSMA2 (human) mapping to 7p14.1; Psma2 (mouse) mapping to 13 A1.

SOURCE

20S Proteasome $\alpha 2$ (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 45-79 within an internal region of 20S Proteasome $\alpha 2$ of human origin.

PRODUCT

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

20S Proteasome $\alpha 2$ (B-4) is available conjugated to agarose (sc-377148 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377148 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377148 PE), fluorescein (sc-377148 FITC), Alexa Fluor[®] 488 (sc-377148 AF488), Alexa Fluor[®] 546 (sc-377148 AF546), Alexa Fluor[®] 594 (sc-377148 AF594) or Alexa Fluor[®] 647 (sc-377148 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-377148 AF680) or Alexa Fluor[®] 790 (sc-377148 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377148 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

PROTOCOLS

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

APPLICATIONS

20S Proteasome $\alpha 2$ (B-4) 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).

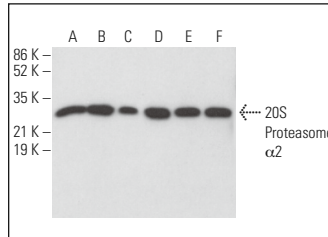
20S Proteasome $\alpha 2$ (B-4) is also recommended for detection of 20S Proteasome $\alpha 2$ in additional species, including canine, bovine, porcine and avian.

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.

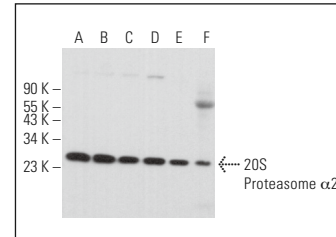
Molecular Weight of 20S Proteasome $\alpha 2$: 26 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or CCRF-CEM cell lysate: sc-2225.

DATA



20S Proteasome $\alpha 2$ (B-4): sc-377148. Western blot analysis of 20S Proteasome $\alpha 2$ expression in JAR (A), Jurkat (B), HeLa (C), CCRF-CEM (D), A-431 (E) and PC-12 (F) whole cell lysates. Detection reagent used: m-IgG κ BP-HRP: sc-516102.



20S Proteasome $\alpha 2$ (B-4): sc-377148. Western blot analysis of 20S Proteasome $\alpha 2$ expression in HeLa (A), Jurkat (B), CCRF-CEM (C), AMJ2-C8 (D) and MH-S (E) whole cell lysates and rat lung tissue extract (F).

SELECT PRODUCT CITATIONS

- Zhang, T., et al. 2017. Proteome-wide modulation of degradation dynamics in response to growth arrest. *Proc. Natl. Acad. Sci. USA* 114: E10329-E10338.
- Guo, Y., et al. 2022. Histone H2A ubiquitination resulting from Brap loss of function connects multiple aging hallmarks and accelerates neurodegeneration. *iScience* 25: 104519.
- Vdovin, A., et al. 2022. The deubiquitinase OTUD1 regulates immunoglobulin production and proteasome inhibitor sensitivity in multiple myeloma. *Nat. Commun.* 13: 6820.
- Wang, C.I., et al. 2025. PSMA2 promotes chemo- and radioresistance of oral squamous cell carcinoma by modulating mitophagy pathway. *Cell Death Discov.* 11: 2.

RESEARCH USE

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