

20S Proteasome β 5 (A-10): sc-393931

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: PSMB5 (human) mapping to 14q11.2.

SOURCE

20S Proteasome β 5 (A-10) is a mouse monoclonal antibody raised against amino acids 217-263 mapping at the C-terminus of 20S Proteasome β 5 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

20S Proteasome β 5 (A-10) is available conjugated to agarose (sc-393931 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393931 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393931 PE), fluorescein (sc-393931 FITC), Alexa Fluor® 488 (sc-393931 AF488), Alexa Fluor® 546 (sc-393931 AF546), Alexa Fluor® 594 (sc-393931 AF594) or Alexa Fluor® 647 (sc-393931 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393931 AF680) or Alexa Fluor® 790 (sc-393931 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

20S Proteasome β 5 (A-10) is recommended for detection of 20S Proteasome β 5 of 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 β 5 (A-10) is also recommended for detection of 20S Proteasome β 5 in additional species, including bovine.

Suitable for use as control antibody for 20S Proteasome β 5 siRNA (h): sc-62872, 20S Proteasome β 5 shRNA Plasmid (h): sc-62872-SH and 20S Proteasome β 5 shRNA (h) Lentiviral Particles: sc-62872-V.

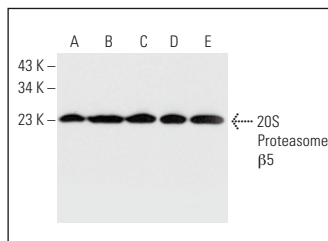
Molecular Weight of 20S Proteasome β 5: 23 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

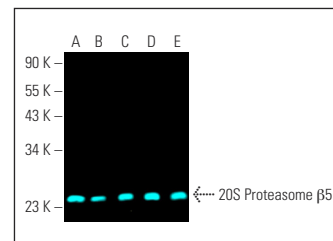
STORAGE

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

DATA



20S Proteasome β 5 (A-10): sc-393931. Western blot analysis of 20S Proteasome β 5 expression in Jurkat (A), HeLa (B), IFN- γ treated HeLa (C), MIA PaCa-2 (D) and Hep G2 (E) whole cell lysates.



20S Proteasome β 5 (A-10) Alexa Fluor® 647: sc-393931 AF647. Direct fluorescent western blot analysis of 20S Proteasome β 5 expression in PC-3 (A), Jurkat (B), HeLa (C), MIA PaCa-2 (D) and Hep G2 (E) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

- Ou, J., et al. 2018. iPSCs from a hibernator provide a platform for studying cold adaptation and its potential medical applications. *Cell* 173: 851-863.e16.
- Nijomen, E. and Tepe, J.J. 2019. Regulation of autophagic flux by the 20S Proteasome. *Cell Chem. Biol.* 26: 1283-1294.e5.
- Hsiao, J.C., et al. 2022. A ubiquitin-independent proteasome pathway controls activation of the CARD8 inflammasome. *J. Biol. Chem.* 298: 102032.
- Tubío-Santamaría, N., et al. 2023. Immunoproteasome function maintains oncogenic gene expression in KMT2A-complex driven leukemia. *Mol. Cancer* 22: 196.
- Wang, S., et al. 2024. Discovery of novel 20S proteasome subunit β 5 PROTAC degraders as potential therapeutics for pharyngeal carcinoma and Bortezomib-resistant multiple myeloma. *Bioorg. Chem.* 153: 107801.
- Zhou, X., et al. 2024. ZFP541 and KCTD19 regulate chromatin organization and transcription programs for male meiotic progression. *Cell Prolif.* 57: e13567.
- VerPlank, J.J., et al. 2024. Knockout of PA200 improves proteasomal degradation and myelination in a proteotoxic neuropathy. *Life Sci. Alliance* 7: e202302349.
- Plakoula, E., et al. 2025. Prognostic value of PSMB5 and correlations with LC3II and reactive oxygen species levels in the bone marrow mononuclear cells of bortezomib-resistant multiple myeloma patients. *Curr. Issues Mol. Biol.* 47: 32.

RESEARCH USE

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

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