

20S Proteasome α 7/ α 8 (T-19): sc-54728

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

- Kristensen, P., et al. 1995. Human proteasome subunits from two-dimensional gels identified by partial sequencing. *Biochem. Biophys. Res. Commun.* 205: 1785-1789.
- Morimoto, Y., et al. 1995. Ordered structure of the crystallized bovine 20S Proteasome. *J. Biochem.* 117: 471-474.
- 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 Kappahn, R.J. 2004. Catalytic site-specific inhibition of the 20S Proteasome by 4-hydroxynonenal. *FEBS Lett.* 578: 217-223.
- Huang, L. and Burlingame, A.L. 2006. Comprehensive mass spectrometric analysis of the 20S Proteasome complex. *Methods Enzymol.* 405: 187-236.
- 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.
- Rydzewski, R.M., et al. 2006. Optimization of subsite binding to the β 5 subunit of the human 20S Proteasome using vinyl sulfones and 2-keto-1,3,4-oxadiazoles: syntheses and cellular properties of potent, selective proteasome inhibitors. *J. Med. Chem.* 49: 2953-2968.

CHROMOSOMAL LOCATION

Genetic locus: PSMA7 (human) mapping to 20q13.33, PSMA8 (human) mapping to 18q11.2; PsmA7 (mouse) mapping to 2 H4, PsmA8 (mouse) mapping to 18 A1.

SOURCE

20S Proteasome α 7/ α 8 (T-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of 20S Proteasome α 7 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-54728 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

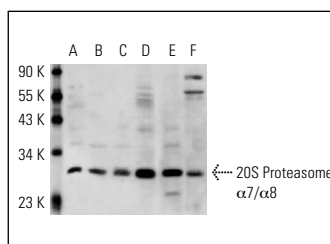
20S Proteasome α 7/ α 8 (T-19) is recommended for detection of 20S Proteasome α 7 and 20S Proteasome α 8 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (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 α 7/ α 8 (T-19) is also recommended for detection of 20S Proteasome α 7 and 20S Proteasome α 8 in additional species, including equine, canine, bovine, porcine and avian.

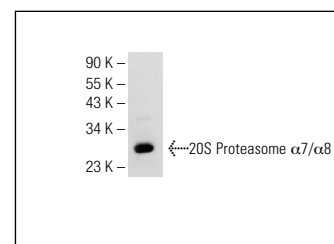
Molecular Weight of 20S Proteasome α 7/ α 8: 28 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

DATA



20S Proteasome α 7/ α 8 (T-19): sc-54728. Western blot analysis of 20S Proteasome α 7/ α 8 expression in WI-38 (A), A549 (B), HeLa (C), PC-12 (D) and Hep G2 (E) whole cell lysates and mouse brain tissue extract (F).



20S Proteasome α 7/ α 8 (T-19): sc-54728. Western blot analysis of 20S Proteasome α 7/ α 8 expression in MCF7 whole cell lysate.

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.



Try **20S Proteasome α 7/ α 8 (B-4): sc-166761** or **20S Proteasome α 7 (MCP72): sc-58417**, our highly recommended monoclonal alternatives to 20S Proteasome α 7/ α 8 (T-19).