SANTA CRUZ BIOTECHNOLOGY, INC.

20S Proteasome β7 (D-14): sc-54677

The Power to Question

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. 1995. 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. Meth. Enzymol. 405: 187-236.
8. Madding, L.S., et al. 2006. Role of the β1 subunit in the function and stability of the 20S Proteasome in the hyperthermophilic archaeon *Pyrococcus furiosus*. J. Bacteriol. 189: 583-590.
9. Rydzewski, R.M., et al. 2006. Optimization of subsite binding to the β5 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: PSMB7 (human) mapping to 9q33.3; Psmb7 (mouse) mapping to 2 B.

SOURCE

20S Proteasome β7 (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of 20S Prote-asome β7 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-54677 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

20S Proteasome β7 (D-14) is recommended for detection of 20S Proteasome β7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 β7 (D-14) is also recommended for detection of 20S Proteasome β7 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for 20S Proteasome β7 siRNA (h): sc-62874, 20S Proteasome β7 siRNA (m): sc-62875, 20S Proteasome β7 shRNA Plasmid (h): sc-62874-SH, 20S Proteasome β7 shRNA Plasmid (m): sc-62875-SH, 20S Proteasome β7 shRNA (h) Lentiviral Particles: sc-62874-V and 20S Proteasome β7 shRNA (m) Lentiviral Particles: sc-62875-V.

Molecular Weight of 20S Proteasome β7: 30 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.