# SANTA CRUZ BIOTECHNOLOGY, INC.

# 20S Proteasome α2 (C-16): sc-54715



# 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:  $\alpha$ subunits, which are structural, serve as docking domains for the regulatory particles and exterior gates blocking unregulated access to the interior cavity; or  $\beta$  subunits, which are predominantly catalytic. The outer two rings in the proteasome consist of seven  $\alpha$  subunits each, and the inner two rings each consist of seven  $\beta$  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.

## CHROMOSOMAL LOCATION

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

### SOURCE

20S Proteasome  $\alpha$ 2 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of 20S Proteasome  $\alpha$ 2 of human origin.

# PRODUCT

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

Blocking peptide available for competition studies, sc-54715 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

# **STORAGE**

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

# **APPLICATIONS**

20S Proteasome  $\alpha$ 2 (C-16) is recommended for detection of 20S Proteasome  $\alpha 2$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 (C-16) is also recommended for detection of 20S Proteasome  $\alpha 2$  in additional species, including equine, 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: 20S Proteasome  $\alpha$ 2 (h): 293T Lysate: sc-116165, Jurkat whole cell lysate: sc-2204 or JAR cell lysate: sc-2276.

### DATA





20S Proteasome  $\alpha$ 2 (C-16): sc-54715. Western blot analysis of 20S Proteasome  $\alpha$ 2 expression in non-trans fected 293T: sc-117752 (**A**), human 20S Proteasome  $\alpha$ 2 transfected 293T: sc-116165 (B) and HeLa (C) whole cell

20S Proteasome a2 (C-16): sc-54715. Western blot analysis of 20S Proteasome  $\alpha$ 2 expression in Jurkat (A), HeLa (B), JAR (C) and JEG-3 (D) whole cell lysates.

#### **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.

# MONOS Satisfation Guaranteed

Try 20S Proteasome a2 (B-4): sc-377148 or 20S Proteasome oc2 (B-7): sc-390888, our highly recommended monoclonal alternatives to 20S Proteasome  $\alpha 2$  (C-16).