# SANTA CRUZ BIOTECHNOLOGY, INC.

# 20S Proteasome α1 (h2): 293T Lysate: sc-112756



# BACKGROUND

Ubiquitin-dependent proteolysis mediates selective destruction of various cell cycle regulators, transcription factors and tumor suppressors. In eukaryotic cells, selective breakdown of cellular proteins is ensured by their ubiquitination and subsequent degradation by the 26S Proteasome. At specific stages of development, embryo- and tissue-specific components of the 26S Proteasome form, facilitating proteolysis. 20S Proteasome  $\alpha 1$ , also designated macropain subunit C2 or PROS-30, is a prosomal protein involved in a non-lysosomal ATP/ ubiquitin-dependent proteolytic pathway. The entire proteasome is composed of at least 15 non-identical subunits, which form a highly-ordered ring-shaped structure.

# REFERENCES

- Silva Pereira, I., Bey, F., Coux, O. and Scherrer, K. 1992. Two mRNAs exist for the Hs PROS-30 gene encoding a component of human prosomes. Gene 120: 235-242.
- Bey, F., Silva Pereira, I., Coux, O., Viegas-Péquignot, E., Recillas Targa, F., Nothwang, H.G., Dutrillaux, B. and Scherrer, K. 1993. The prosomal RNAbinding protein p27K is a member of the α-type human prosomal gene family. Mol. Gen. Genet. 237: 193-205.
- Kristensen, P., Johnsen, A.H., Uerkvitz, W., Tanaka, K. and Hendil, K.B. 1994. Human proteasome subunits from 2-dimensional gels identified by partial sequencing. Biochem. Biophys. Res. Commun. 205: 1785-1789.
- 4. Zaiss, D. and Belote, J.M. 1997. Molecular cloning of the *Drosophila* melanogaster gene  $\alpha$ 5\_dm encoding a 20S Proteasome  $\alpha$ -type subunit. Gene 201: 99-105.
- Knipfer, N., Seth, A., Roudiak, S.G. and Shrader, T.E. 1999. Species variation in ATP-dependent protein degradation: protease profiles differ between mycobacteria and protease functions differ between *Mycobacterium smegmatis* and *Escherichia coli*. Gene 231: 95-104.
- Whitehouse, A.S., Smith, H.J., Drake, J.L. and Tisdale, M.J. 2001. Mechanism of attenuation of skeletal muscle protein catabolism in cancer cachexia by eicosapentaenoic acid. Cancer Res. 61: 3604-3609.
- 7. Touitou, R., Richardson, J., Bose, S., Nakanishi, M., Rivett, J. and Allday, M.J. 2001. A degradation signal located in the C-terminus of p21WAF1/ CIP1 is a binding site for the C8 $\alpha$ -subunit of the 20S Proteasome. EMBO J. 20: 2367-2375.
- 8. Whitehouse, A.S. and Tisdale, M.J. 2001. Downregulation of ubiquitindependent proteolysis by eicosapentaenoic acid in acute starvation. Biochem. Biophys. Res. Commun. 285: 598-602.
- Higashitsuji, H., Liu, Y., Mayer, R.J. and Fujita, J. 2005. The oncoprotein gankyrin negatively regulates both p53 and Rb by enhancing proteasomal degradation. Cell Cycle 4: 1335-1337.

# CHROMOSOMAL LOCATION

Genetic locus: PSMA1 (human) mapping to 11p15.2.

### **RESEARCH USE**

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

# PRODUCT

20S Proteasome  $\alpha$ 1 (h2): 293T Lysate represents a lysate of human 20S Proteasome  $\alpha$ 1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

# **APPLICATIONS**

20S Proteasome  $\alpha$ 1 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive 20S Proteasome  $\alpha$ 1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-tranfected 293T cells.

20S Proteasome  $\alpha$ 1 (C-7): sc-166073 is recommended as a positive control antibody for Western Blot analysis of enhanced human 20S Proteasome  $\alpha$ 1 expression in 20S Proteasome  $\alpha$ 1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

# **RECOMMENDED SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-lgG $\kappa$  BP-HRP: sc-516102 or m-lgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

### DATA



20S Proteasome  $\alpha$ 1 (C-7): sc-166073. Western blot analysis of 20S Proteasome  $\alpha$ 1 expression in non-transfected: sc-117752 (**A**) and human 20S Proteasome  $\alpha$ 1 transfected: sc-112756 (**B**) 293T whole cell lysates.

### **STORAGE**

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

### PROTOCOLS

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