

PA200 (m): 293T Lysate: sc-179282

BACKGROUND

PA200 (proteasome activator 200 kDa), also known as PSME4 (proteasome (prosome, macropain) activator subunit 4), is a 1,843 amino acid nuclear protein that contains 6 HEAT (huntington, elongation factor 3, PR65/A, TOR) repeats, which are conserved residues that form the hydrophobic domain core and are usually found in proteins that are involved in intracellular transport. Existing as a homodimer, PA200 interacts with the 20S and 26S proteasomes and activates proteasomal cleavage of peptides in an energy-independent manner. PA200 and proteasomes function together within cells and respond to specific radiation-induced damage independent of the stage of cell cycle arrest. Broadly expressed, PA200 may also be involved in spermatogenesis and in DNA repair double-strand breaks (DSBs). Four isoforms of PA200 exist due to alternative splicing events.

REFERENCES

1. Ustrell, V., et al. 2002. PA200, a nuclear proteasome activator involved in DNA repair. *EMBO J.* 21: 3516-3525.
2. Kajava, A.V., et al. 2004. New HEAT-like repeat motifs in proteins regulating proteasome structure and function. *J. Struct. Biol.* 146: 425-430.
3. Ortega, J., et al. 2005. The axial channel of the 20S proteasome opens upon binding of the PA200 activator. *J. Mol. Biol.* 346: 1221-1227.
4. Ustrell, V., et al. 2005. Purification and assay of proteasome activator PA200. *Meth. Enzymol.* 398: 321-329.
5. Gomes, A.V., et al. 2006. Mapping the murine cardiac 26S proteasome complexes. *Circ. Res.* 99: 362-371.
6. McCulloch, S., et al. 2006. blm3-1 is an allele of UBP3, a ubiquitin protease that appears to act during transcription of damaged DNA. *J. Mol. Biol.* 363: 660-672.
7. Khor, B., et al. 2006. Proteasome activator PA200 is required for normal spermatogenesis. *Mol. Cell. Biol.* 26: 2999-3007.
8. Blickwedehl, J., et al. 2007. Proteasomes and proteasome activator 200 kDa (PA200) accumulate on chromatin in response to ionizing radiation. *Radiat. Res.* 167: 663-674.
9. Blickwedehl, J., et al. 2008. Role for proteasome activator PA200 and postglutamyl proteasome activity in genomic stability. *Proc. Natl. Acad. Sci. USA* 105: 16165-16170.

CHROMOSOMAL LOCATION

Genetic locus: Psme4 (mouse) mapping to 11 A4.

PRODUCT

PA200 (m): 293T Lysate represents a lysate of mouse PA200 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

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.

APPLICATIONS

PA200 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive PA200 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-transfected 293T cells.

RESEARCH USE

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

PROTOCOLS

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