



Proteasemblin (h): 293 Lysate: sc-110788

BACKGROUND

Proteasemblin, also known as POMP (proteasome maturation protein), UMP1 or voltage-gated potassium channel β subunit 4.1, is an endoplasmic reticulum (ER) associated protein that functions as a molecular chaperone required for proteasome and immunoproteasome assembly. Essential for cell viability and induced by IFN- γ , Proteasemblin associates with preproteasomes and specifically binds to 20S Proteasome β 1i, β 1, β 5, β 6 and β 7 subunits. Proteasemblin is responsible for mediating the binding of the 20S preproteasome to the ER membrane and is required for incorporation of the β subunits into the 20S Proteasome. Proteasemblin is the human homolog of the yeast Ump1 protein. Unlike Ump1, which becomes incorporated into the proteasome, Proteasemblin is degraded upon maturation of the newly formed proteasome.

REFERENCES

1. Griffin, T.A., Slack, J.P., McCluskey, T.S., Monaco, J.J. and Colbert, R.A. 2000. Identification of Proteasemblin, a mammalian homologue of the yeast protein, Ump1p, that is required for normal proteasome assembly. *Mol. Cell Biol. Res. Commun.* 3: 212-217.
2. Meiners, S., Heyken, D., Weller, A., Ludwig, A., Stangl, K., Kloetzel, P.M. and Krüger, E. 2003. Inhibition of proteasome activity induces concerted expression of proteasome genes and *de novo* formation of mammalian proteasomes. *J. Biol. Chem.* 278: 21517-21525.
3. Jayarapu, K. and Griffin, T.A. 2004. Protein-protein interactions among human 20S Proteasome subunits and Proteasemblin. *Biochem. Biophys. Res. Commun.* 314: 523-528.
4. Chen, Q., Ding, Q., Thorpe, J., Dohmen, R.J. and Keller, J.N. 2005. RNA interference toward UMP1 induces proteasome inhibition in *Saccharomyces cerevisiae*: evidence for protein oxidation and autophagic cell death. *Free Radic. Biol. Med.* 38: 226-234.
5. Heink, S., Ludwig, D., Kloetzel, P.M. and Krüger, E. 2005. IFN- γ -induced immune adaptation of the proteasome system is an accelerated and transient response. *Proc. Natl. Acad. Sci. USA* 102: 9241-9246.
6. Hirano, Y., Hendil, K.B., Yashiroda, H., Iemura, S., Nagane, R., Hioki, Y., Natsume, T., Tanaka, K. and Murata, S. 2005. A heterodimeric complex that promotes the assembly of mammalian 20S Proteasomes. *Nature* 437: 1381-1385.
7. McIntyre, J., Podlaska, A., Skoneczna, A., Halas, A. and Sledziewska-Gojska, E. 2006. Analysis of the spontaneous mutator phenotype associated with 20S Proteasome deficiency in *S. cerevisiae*. *Mutat. Res.* 593: 153-163.
8. Hoefer, M.M., Boneberg, E.M., Grotegut, S., Kusch, J. and Illges, H. 2006. Possible tetramerisation of the proteasome maturation factor POMP/Proteasemblin/hUmp1 and its subcellular localisation. *Int. J. Biol. Macromol.* 38: 259-267.
9. Fricke, B., Heink, S., Steffen, J., Kloetzel, P.M. and Krüger, E. 2007. The proteasome maturation protein POMP facilitates major steps of 20S Proteasome formation at the endoplasmic reticulum. *EMBO Rep.* 8: 1170-1175.

CHROMOSOMAL LOCATION

Genetic locus: POMP (human) mapping to 13q12.3.

PRODUCT

Proteasemblin (h): 293 Lysate represents a lysate of human Proteasemblin transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

Proteasemblin (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive Proteasemblin antibodies. Recommended use: 10-20 μ l per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

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.

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.