

Proteasemblin (H-3): sc-271414

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 Proteasome 20S 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., et al. 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., et al. 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., et al. 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., et al. 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., et al. 2005. A heterodimeric complex that promotes the assembly of mammalian 20S Proteasomes. *Nature* 437: 1381-1385.

CHROMOSOMAL LOCATION

Genetic locus: POMP (human) mapping to 13q12.3; Pomp (mouse) mapping to 5 G3.

SOURCE

Proteasemblin (H-3) is a mouse monoclonal antibody raised against amino acids 1-141 representing full length Proteasemblin of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Proteasemblin (H-3) is recommended for detection of Proteasemblin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Suitable for use as control antibody for Proteasemblin siRNA (h): sc-62890, Proteasemblin siRNA (m): sc-62891, Proteasemblin shRNA Plasmid (h): sc-62890-SH, Proteasemblin shRNA Plasmid (m): sc-62891-SH, Proteasemblin shRNA (h) Lentiviral Particles: sc-62890-V and Proteasemblin shRNA (m) Lentiviral Particles: sc-62891-V.

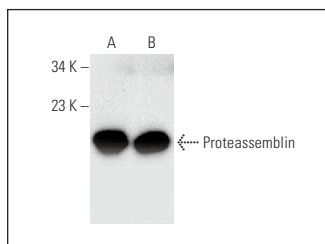
Molecular Weight of Proteasemblin: 16 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, SW480 cell lysate: sc-2219 or Jurkat whole cell lysate: sc-2204.

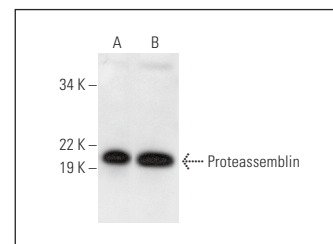
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Proteasemblin (H-3): sc-271414. Western blot analysis of Proteasemblin expression in HL-60 (A) and SW480 (B) whole cell lysates.



Proteasemblin (H-3): sc-271414. Western blot analysis of Proteasemblin expression in Jurkat (A) and HeLa (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wang, X., et al. 2021. Mucin 20 modulates proteasome capacity through c-Met signalling to increase carfilzomib sensitivity in mantle cell lymphoma. *J. Cell. Mol. Med.* 25: 10164-10174.

RESEARCH USE

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