

SUG1 (H-7): sc-390631

BACKGROUND

The 26S Proteasome is a highly ordered proteinase complex consisting of a 20S core and a 19S regulator. While the core is responsible for the proteolytic activity of the proteasome, the regulator contains several ATPase subunits which function in the ATP-dependent degradation of ubiquitinated proteins and confer substrate specificity to the 26S complex. SUG1, also known as PSMC5 (proteasome 26S subunit ATPase 5), p45 or S8, is an ATPase subunit that is an integral part of the 26S proteasome complex. Localized to the cytoplasm and nucleus, SUG1 is part of the 19S regulator and functions in the ubiquitin/proteasome-mediated degradation of proteins (specifically receptors) found in the endoplasmic reticulum (ER). Recent studies suggest that assembly of the 26S Proteasome is dependent upon phosphorylation of SUG1 by a protein kinase. *In vitro*, SUG1 also interacts with RXR (retinoid X receptor) and TR (thyroid hormone receptor), suggesting a possible role in transcriptional regulation.

REFERENCES

- Fraser, R.A., et al. 1997. SUG1, a putative transcriptional mediator and subunit of the PA700 proteasome regulatory complex, is a DNA helicase. *J. Biol. Chem.* 272: 7122-7126.
- Makino, Y., et al. 1997. SUG1, a component of the 26 S Proteasome, is an ATPase stimulated by specific RNAs. *J. Biol. Chem.* 272: 23201-23205.
- Masuyama, H. and MacDonald, P.N. 1999. Proteasome-mediated degradation of the vitamin D receptor (VDR) and a putative role for SUG1 interaction with the AF-2 domain of VDR. *J. Cell. Biochem.* 71: 429-440.
- Su, K., et al. 2000. Human SUG1/p45 is involved in the proteasome-dependent degradation of Sp1. *Biochem. J.* 348: 281-289.

CHROMOSOMAL LOCATION

Genetic locus: PSMC5 (human) mapping to 17q23.3; Psmc5 (mouse) mapping to 11 E1.

SOURCE

SUG1 (H-7) is a mouse monoclonal antibody raised against amino acids 89-152 mapping within an internal region of SUG1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SUG1 (H-7) is available conjugated to agarose (sc-390631 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390631 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390631 PE), fluorescein (sc-390631 FITC), Alexa Fluor® 488 (sc-390631 AF488), Alexa Fluor® 546 (sc-390631 AF546), Alexa Fluor® 594 (sc-390631 AF594) or Alexa Fluor® 647 (sc-390631 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390631 AF680) or Alexa Fluor® 790 (sc-390631 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

SUG1 (H-7) is recommended for detection of SUG1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

SUG1 (H-7) is also recommended for detection of SUG1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SUG1 siRNA (h): sc-76603, SUG1 siRNA (m): sc-76604, SUG1 shRNA Plasmid (h): sc-76603-SH, SUG1 shRNA Plasmid (m): sc-76604-SH, SUG1 shRNA (h) Lentiviral Particles: sc-76603-V and SUG1 shRNA (m) Lentiviral Particles: sc-76604-V.

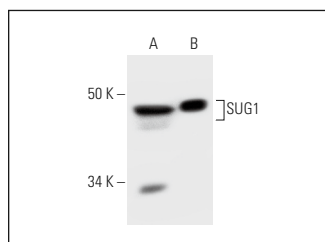
Molecular Weight of SUG1: 48 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or LADMAC whole cell lysate: sc-364189.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



SUG1 (H-7): sc-390631. Western blot analysis of SUG1 expression in Hep G2 (A) and LADMAC (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Yang, Y., et al. 2022. ISG20L2 suppresses bortezomib antimyeloma activity by attenuating bortezomib binding to PSMB5. *JCI Insight* 7: e157081.

STORAGE

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

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