

SUG1 (C-3): sc-376389

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 26S Proteasome, is an ATPase stimulated by specific RNAs. *J. Biol. Chem.* 272: 23201-23205.
- Masuyama, H. and MacDonald, P.N. 1998. 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.
- Chang, C., et al. 2001. The GAL4 activation domain binds SUG2 protein, a proteasome component, *in vivo* and *in vitro*. *J. Biol. Chem.* 276: 30956-30963.
- Gianni, M., et al. 2002. Phosphorylation by p38 MAPK and recruitment of SUG1 are required for RA-induced RAR γ degradation and transactivation. *EMBO J.* 21: 3760-3769.

CHROMOSOMAL LOCATION

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

SOURCE

SUG1 (C-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 327-365 within an internal region of SUG1 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.

Blocking peptide available for competition studies, sc-376389 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SUG1 (C-3) 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 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 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.

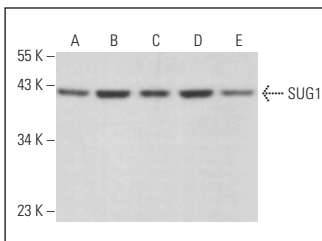
Molecular Weight of SUG1: 45 kDa.

Positive Controls: ECV304 cell lysate: sc-2269, LADMAC whole cell lysate: sc-364189 or SUG1 (h2): 293 Lysate: sc-172033.

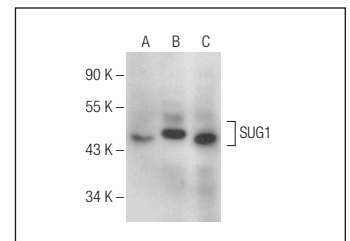
RECOMMENDED SUPPORT REAGENTS

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



SUG1 (C-3): sc-376389. Western blot analysis of SUG1 expression in ECV304 (A), NIH/3T3 (B), EOC 20 (C), C6 (D) and A-10 (E) whole cell lysates.



SUG1 (C-3): sc-376389. Western blot analysis of SUG1 expression in non-transfected 293: sc-110760 (A), human SUG1 transfected 293: sc-172033 (B) and LADMAC (C) whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. 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.