

## SMG5 (N-16): sc-50979

### BACKGROUND

The eukaryotic nonsense-mediated mRNA decay (NMD) pathway is a post-transcriptional process that promotes rapid degradation of mRNAs containing premature stop codons (PTCs). In humans, NMD depends on RNA-dependent ATPase and 5' to 3' helicase UPF1, plus six other proteins designated SMG1, SMG5, SMG6, SMG7, UPF2 and UPF3. SMG5, SMG7 and UPF1 localize to cytoplasmic foci called P-bodies, while SMG5, SMG6 and SMG7 target UPF1 for dephosphorylation. SMG5 is involved in nonsense-mediated mRNA decay, is necessary for TERT activity and promotes dephosphorylation of RENT1. SMG6 is a component of the telomerase ribonucleoprotein (RNP) complex that is necessary for the replication of chromosome termini. It may be involved in telomere regulation, as it helps TERT elongate telomeres. SMG7 may act as an adaptor in targeting mRNAs associated with phosphorylated UPF1 for degradation.

### REFERENCES

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3. Ohnishi, T., Yamashita, A., Kashima, I., Schell, T., Anders, K.R., Grimson, A., Hachiya, T., Hentze, M.W., Anderson, P. and Ohno, S. 2003. Phosphorylation of hUPF1 induces formation of mRNA surveillance complexes containing hSMG-5 and hSMG-7. *Mol. Cell* 12: 1187-1200.
4. Unterholzner, L. and Izaurralde, E. 2004. SMG7 acts as a molecular link between mRNA surveillance and mRNA decay. *Mol. Cell* 16: 587-596.
5. Rehwinkel, J., Letunic, I., Raes, J., Bork, P. and Izaurralde, E. 2005. Nonsense-mediated mRNA decay factors a targets. *RNA* 11: 1530-1544.
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7. Fukuhara, N., Ebert, J., Unterholzner, L., Lindner, D., Izaurralde, E. and Conti, E. 2005. SMG7 is a 14-3-3-like adaptor in the nonsense-mediated mRNA decay pathway. *Mol. Cell* 17: 537-547.

### CHROMOSOMAL LOCATION

Genetic locus: SMG5 (human) mapping to 1q21.2; Smg5 (mouse) mapping to 3 F1.

### SOURCE

SMG5 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SMG5 of human origin.

### STORAGE

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

### PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-50979 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

SMG5 (N-16) is recommended for detection of SMG5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

SMG5 (N-16) is also recommended for detection of SMG5 in additional species, including bovine and porcine.

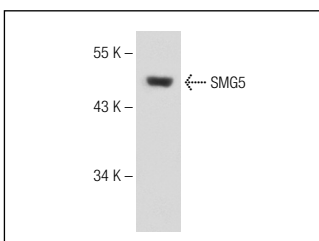
Suitable for use as control antibody for SMG5 siRNA (h): sc-61567, SMG5 siRNA (m): sc-61568, SMG5 shRNA Plasmid (h): sc-61567-SH, SMG5 shRNA Plasmid (m): sc-61568-SH, SMG5 shRNA (h) Lentiviral Particles: sc-61567-V and SMG5 shRNA (m) Lentiviral Particles: sc-61568-V.

Positive Controls: Jurkat whole cell lysate: sc-2204 or CTLL-2 cell lysate: sc-2242.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### DATA



SMG5 (N-16): sc-50979. Western blot analysis of SMG5 expression in Jurkat whole cell lysate.

### RESEARCH USE

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