

SMG6 (E-15)-R: sc-50983-R

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 also be involved in telomere regulation, as it helps TERT elongate telomeres.

REFERENCES

1. Reichenbach, P., Höss, M., Azzalin, C.M., Nabholz, M., Bucher, P. and Lingner, J. 2003. A human homolog of yeast Est1 associates with telomerase and uncaps chromosome ends when overexpressed. *Curr. Biol.* 13: 568-574.
2. Snow, B.E., Erdmann, N., Cruickshank, J., Goldman, H., Gill, R.M., Robinson, M.O. and Harrington, L. 2003. Functional conservation of the telomerase protein Est1p in humans. *Curr. Biol.* 13: 698-704.
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.
6. Rehwinkel, J., Behm-Ansmant, I., Gatfield, D. and Izaurralde, E. 2005. A crucial role for GW182 and the DCP1:DCP2 decapping complex in miRNA-mediated gene silencing. *RNA* 11: 1640-1647.
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: SMG6 (human) mapping to 17p13.3; Smg6 (mouse) mapping to 11 B5.

SOURCE

SMG6 (E-15)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of SMG6 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-50983 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-50983 X, 200 µg/0.1 ml.

APPLICATIONS

SMG6 (E-15)-R is recommended for detection of SMG6 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

SMG6 (E-15)-R is also recommended for detection of SMG6 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SMG6 siRNA (h): sc-61569, SMG6 siRNA (m): sc-61570, SMG6 shRNA Plasmid (h): sc-61569-SH, SMG6 shRNA Plasmid (m): sc-61570-SH, SMG6 shRNA (h) Lentiviral Particles: sc-61569-V and SMG6 shRNA (m) Lentiviral Particles: sc-61570-V.

SMG6 (E-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotting A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.