

GSG1 (T-25): sc-133640

BACKGROUND

Polyadenylation of the 3-prime ends of eukaryotic mRNAs is a key event that takes place in the nucleus during maturation of mRNA. The reaction includes endoribonucleolytic cleavage of the pre-RNA at the poly(A) site that leads to synthesis of the poly(A) tail at the 3-prime end of the upstream cleavage product. The adenosine addition reaction depends on poly(A) polymerase (PAP) activity. The testis express PAP-β (TPAP) in the cytoplasm of spermatogenic cells. The adenosine addition function of PAP-β plays a critical role in male germ cell production. PAP-β-deficient transgenic mice display impaired expression of haploid-specific genes that are necessary for spermatogenesis. GSG1 (Germ cell-specific gene 1 protein) is a 349 amino acid endoplasmic reticulum protein that causes the redistribution of PAP-β from the cytosol to the endoplasmic reticulum. There are eight isoforms of GSG1 that are produced as a result of alternative splicing events.

REFERENCES

- Christofori, G. and Keller, W. 1989. Poly(A) polymerase purified from HeLa cell nuclear extract is required for both cleavage and polyadenylation of pre-mRNA *in vitro*. *Mol. Cell. Biol.* 9: 193-203.
- Kashiwabara, S., Zhuang, T., Yamagata, K., Noguchi, J., Fukamizu, A. and Baba, T. 2000. Identification of a novel isoform of poly(A) polymerase, TPAP, specifically present in the cytoplasm of spermatogenic cells. *Dev. Biol.* 228: 106-115.
- Lee, Y.J., Lee, Y. and Chung, J.H. 2000. An intronless gene encoding a poly(A) polymerase is specifically expressed in testis. *FEBS Lett.* 487: 287-292.
- Le, Y.J., Kim, H., Chung, J.H. and Lee, Y. 2001. Testis-specific expression of an intronless gene encoding a human poly(A) polymerase. *Mol. Cells.* 11: 379-385.
- Kashiwabara, S., Noguchi, J., Zhuang, T., Ohmura, K., Honda, A., Sugiura, S., Miyamoto, K., Takahashi, S., Inoue, K., Ogura, A. and Baba, T. 2002. Regulation of spermatogenesis by testis-specific, cytoplasmic poly(A) polymerase TPAP. *Science* 298: 1999-2002.
- Zhuang, T., Kashiwabara, S., Noguchi, J. and Baba, T. 2004. Transgenic expression of testis-specific poly(A) polymerase TPAP in wild-type and TPAP-deficient mice. *J. Reprod. Dev.* 50: 207-213.

CHROMOSOMAL LOCATION

Genetic locus: GSG1 (human) mapping to 12p13.1.

SOURCE

GSG1 (T-25) is an affinity purified rabbit polyclonal antibody raised against synthetic GSG1 peptide of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

GSG1 (T-25) is recommended for detection of GSG1 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GSG1 siRNA (h): sc-96141, GSG1 shRNA Plasmid (h): sc-96141-SH and GSG1 shRNA (h) Lentiviral Particles: sc-96141-V.

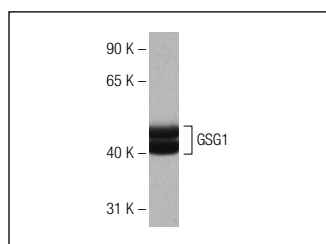
Molecular Weight of GSG1: 39 kDa.

Positive Controls: human fetal liver tissue extract.

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 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).

DATA



GSG1 (T-25): sc-133640. Western blot analysis of GSG1 expression in human fetal liver tissue extract.

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 or our catalog for detailed protocols and support products.