

# GRTP1 (E-17): sc-84292

## BACKGROUND

Pituitary growth hormone (GH), also designated somatotropin, plays a crucial role in stimulating and controlling the growth, metabolism and differentiation of many mammalian cell types by modulating the synthesis of multiple mRNA species. These effects are mediated by the binding of GH to its membrane-bound receptor, GHR, and involve a phosphorylation cascade that results in the modulation of numerous signaling pathways. GRTP1 (growth hormone-regulated TBC protein 1), also designated TBC1 domain family member 6, is a 336 amino acid protein with expression modulated by growth hormone. The TBC1 domain of GRTP1 is a region that is notably conserved among GTPase-activating proteins, which characteristically play a role in the cell cycle and mitosis coordination. Interestingly, expression of GRTP1 is significantly upregulated in post-puberty testis and then maintained in the adult, suggesting that the germ cell may be the major site of GRTP1 function. There are two isoforms of GRTP1, which are a result of alternative splicing events.

## REFERENCES

- Lobie, P.E., Breipohl, W., Aragón, J.G. and Waters, M.J. 1990. Cellular localization of the growth hormone receptor/binding protein in the male and female reproductive systems. *Endocrinology* 126: 2214-2221.
- Boguski, M.S. and McCormick, F. 1993. Proteins regulating Ras and its relatives. *Nature* 366: 643-654.
- Gruaz, N.M., Arsenijevic, Y., Wehrenberg, W.B., Sizonenko, P.C. and Aubert, M.L. 1994. Growth hormone (GH) deprivation induced by passive immunization against rat GH-releasing factor does not disturb the course of sexual maturation and fertility in the female rat. *Endocrinology* 135: 509-519.
- Breier, B.H., Vickers, M.H., Gravance, C.G. and Casey, P.J. 1996. Growth hormone (GH) therapy markedly increases the motility of spermatozoa and the concentration of Insulin-like growth factor-I in seminal vesicle fluid in the male GH-deficient dwarf rat. *Endocrinology* 137: 4061-4064.
- Lu, C., Kasik, J., Stephan, D.A., Yang, S., Sperling, M.A. and Menon, R.K. 2001. Grtp1, a novel gene regulated by growth hormone. *Endocrinology* 142: 4568-4571.
- Pan, X., Eathiraj, S., Munson, M. and Lambright, D.G. 2006. TBC-domain GAPs for Rab GTPases accelerate GTP hydrolysis by a dual-finger mechanism. *Nature* 442: 303-306.
- Gao, X., Jin, C., Xue, Y. and Yao, X. 2008. Computational analyses of TBC protein family in eukaryotes. *Protein Pept. Lett.* 15: 505-509.
- Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 139250. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: GRTP1 (human) mapping to 13q34; Grtp1 (mouse) mapping to 8 A1.1.

## SOURCE

GRTP1 (E-17) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of GRTP1 of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-84292 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GRTP1 (E-17) is recommended for detection of GRTP1 of human and, to a lesser extent, mouse 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).

Suitable for use as control antibody for GRTP1 siRNA (h): sc-75204, GRTP1 siRNA (m): sc-145786, GRTP1 shRNA Plasmid (h): sc-75204-SH, GRTP1 shRNA Plasmid (m): sc-145786-SH, GRTP1 shRNA (h) Lentiviral Particles: sc-75204-V and GRTP1 shRNA (m) Lentiviral Particles: sc-145786-V.

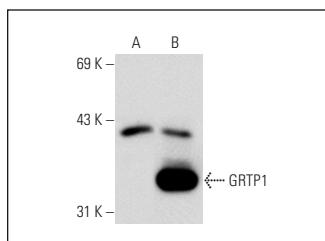
Molecular Weight of GRTP1 isoforms: 39/30 kDa.

Positive Controls: GRTP1 (m): 293T Lysate: sc-120650.

## 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<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto 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<sup>™</sup> Mounting Medium: sc-24941.

## DATA



GRTP1 (E-17): sc-84292. Western blot analysis of GRTP1 expression in non-transfected: sc-117752 (A) and mouse GRTP1 transfected: sc-120650 (B) 293T 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.