

Pit-1 (29): sc-136034

BACKGROUND

Transcriptional regulators play a critical role in development by mediating tissue- and cell-specific transcription. POU domain factors are transcriptional regulators characterized by a bipartite DNA binding domain, which consists of two highly conserved regions, tethered by a variable linker of 14-26 amino acids. Pit-1, also known as growth hormone factor-1 (GHF-1), a member of the POU homeodomain family, is essential for the normal development of the anterior pituitary gland, where it is required for the formation of somatotropes, lactotropes and thyrotropes. In somatotropes and lactotropes, Pit-1 activates the production of growth hormone and Prolactin, respectively. In addition, Pit-1 acts as a repressor of gene expression, which allows for the differentiation of specific cell types. Pit-1 is expressed as two alternatively spliced products, designated Pit-1a and Pit-1b, which differ in their *trans*-activation ability. Mutations in the Pit-1 gene are believed to result in combined pituitary hormone deficiency (CPHD) for growth hormone, Prolactin and thyroid stimulating hormone.

REFERENCES

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- Voss, J.W., et al. 1991. Alternative translation initiation site usage results in two structurally distinct forms of Pit-1. *J. Biol. Chem.* 266: 12832-12835.
- Morris, A.E., et al. 1992. An alternatively spliced Pit-1 isoform altered in its ability to *trans*-activate. *Nucleic Acids Res.* 20: 1355-1361.
- Ohta, K., et al. 1993. Characterization of the gene encoding human pituitary-specific transcription factor, Pit-1. *Gene* 122: 387-388.
- Smith, K.P., et al. 1995. Pit-1 exhibits a unique promoter spacing requirement for activation and synergism. *J. Biol. Chem.* 270: 4484-4491.
- Brown, M.R., et al. 1998. Central hypothyroidism reveals compound heterozygous mutations in the Pit-1 gene. *Hormone Res.* 49: 98-102.
- Mancini, M.G., et al. 1999. Subnuclear partitioning and functional regulation of the Pit-1 transcription factor. *J. Cell. Biochem.* 72: 322-338.
- Schonemann, M.D., et al. 1999. POU domain factors in neural development. *Adv. Exp. Med. Biol.* 449: 39-53.
- Scully, K.M., et al. 2000. Allosteric effects of Pit-1 DNA sites on long-term repression in cell type specification. *Science* 290: 1127-1131.

CHROMOSOMAL LOCATION

Genetic locus: Slc20a1 (rat) mapping to 3q36.

STORAGE

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

PROTOCOLS

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

SOURCE

Pit-1 (29) is a mouse monoclonal antibody raised against amino acids 1-291 representing full length Pit-1 of rat origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 500 µl PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Pit-1 (29) is recommended for detection of Pit-1 of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for immunoprecipitation.

Suitable for use as control antibody for Pit-1 siRNA (r): sc-108037, Pit-1 shRNA Plasmid (r): sc-108037-SH and Pit-1 shRNA (r) Lentiviral Particles: sc-108037-V.

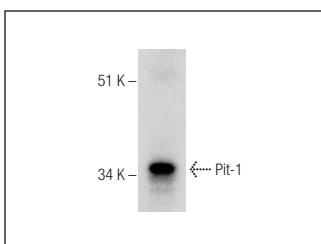
Molecular Weight of Pit-1: 31-35 kDa.

Positive Controls: rat pituitary cell lysate or GH3 whole cell lysate.

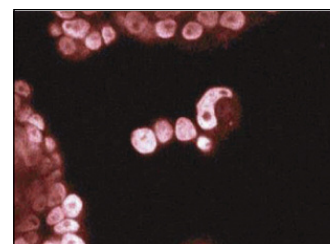
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Pit-1 (29): sc-136034. Western blot analysis of Pit-1 expression in rat pituitary tissue extract.



Pit-1 (29): sc-136034. Immunofluorescence staining of rat pituitary cells showing nuclear localization.

RESEARCH USE

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