

Pit-1 (5E4): sc-47762

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. The gene which encodes Pit-1 maps to human chromosome 3p11.2.

REFERENCES

- Herr, W., et al. 1989. The POU domain: a large conserved region in the mammalian Pit-1, Oct-1, Oct-2 and *Caenorhabditis elegans* UNC-86 gene products. *Genes Dev.* 2: 1513-1516.
- 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. 1992. 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. *Horm. 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.

CHROMOSOMAL LOCATION

Genetic locus: POU1F1 (human) mapping to 3p11.2; Pou1f1 (mouse) mapping to 16 C1.3.

SOURCE

Pit-1 (5E4) is a mouse monoclonal antibody raised against amino acids 30-146 of Pit-1 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Pit-1 (5E4) is recommended for detection of Pit-1 of mouse, rat, human, bovine and porcine 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Pit-1 siRNA (h): sc-36234, Pit-1 siRNA (m): sc-36235, Pit-1 siRNA (r): sc-108037, Pit-1 shRNA Plasmid (h): sc-36234-SH, Pit-1 shRNA Plasmid (m): sc-36235-SH, Pit-1 shRNA Plasmid (r): sc-108037-SH, Pit-1 shRNA (h) Lentiviral Particles: sc-36234-V, Pit-1 shRNA (m) Lentiviral Particles: sc-36235-V and Pit-1 shRNA (r) Lentiviral Particles: sc-108037-V.

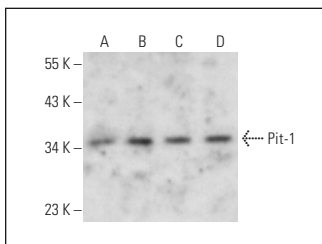
Molecular Weight of Pit-1: 31-35 kDa.

Positive Controls: F9 cell lysate: sc-2245, A-673 cell lysate: sc-2414 or GH3 whole cell lysate: sc-364777.

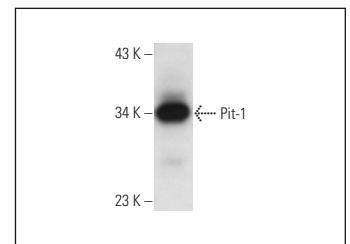
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Pit-1 (5E4): sc-47762. Western blot analysis of Pit-1 expression in A-673 (A), SUP-T1 (B), F9 (C) and RAW 264.7 (D) whole cell lysates.



Pit-1 (5E4): sc-47762. Western blot analysis of Pit-1 expression in GH3 whole cell lysate.

SELECT PRODUCT CITATIONS

- Ben-Shlomo, A., et al. 2013. Constitutive somatostatin receptor subtype 2 activity attenuates GH synthesis. *Endocrinology* 154: 2399-2409.

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.