SANTA CRUZ BIOTECHNOLOGY, INC.

Pit-1 (G-2): sc-25258

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. 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.
2. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Pit-1 (G-2) is a mouse monoclonal antibody raised against full length 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-25258 X, 200 µg/0.1 ml.

Pit-1 (G-2) is available conjugated to agarose (sc-25258 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-25258 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25258 PE), fluorescein (sc-25258 FITC), Alexa Fluor® 488 (sc-25258 AF488), Alexa Fluor® 546 (sc-25258 AF546), Alexa Fluor® 594 (sc-25258 AF594) or Alexa Fluor® 647 (sc-25258 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25258 AF680) or Alexa Fluor® 790 (sc-25258 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

Pit-1 (G-2) is recommended for detection of Pit-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:2,000, dilution range 1:2,000-1:10,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

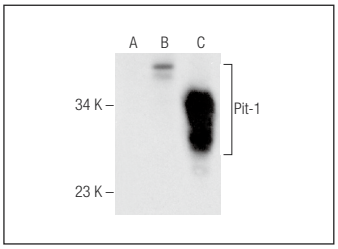
Suitable for use as control antibody for Pit-1 siRNA (h): sc-36234, Pit-1 siRNA (m): sc-36235, Pit-1 siRNA (r): sc-108037, Pit-1 shRNA Plasmid (h): sc-36234-SH, Pit-1 shRNA Plasmid (m): sc-36235-SH, Pit-1 shRNA Plasmid (r): sc-108037-SH, Pit-1 shRNA (h) Lentiviral Particles: sc-36234-V, Pit-1 shRNA (m)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

Pit-1 (G-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

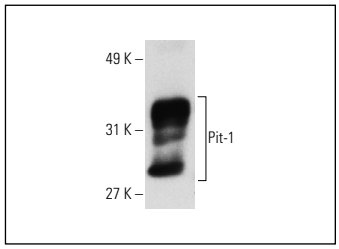
Molecular Weight of Pit-1: 31-35 kDa.

Positive Controls: Pit-1 (h): 293 Lysate: sc-159257, GH3 whole cell lysate: sc- 364777 or rat pituitary tissue extract.

DATA



Pit-1 (G-2): sc-25258. Western blot analysis of Pit-1 expression in non-transfected 293: sc-110760 (**A**), human Pit-1 transfected 293: sc-159257 (**B**) and GH3 (**C**) whole cell lysates.



Pit-1 (G-2): sc-25258. Western blot analysis of Pit-1 expression in rat pituitary tissue extract.

SELECT PRODUCT CITATIONS

1. Romero, C.J., et al. 2012. Insulin-like growth factor 1 mediates negative feedback to somatotroph GH expression via POU1F1/CREB binding protein interactions. Mol. Cell. Biol. 32: 4258-4269.
2. Picech, F., et al. 2021. TGF-β1/Smad2/3 signaling pathway modulates octreotide antisecretory and antiproliferative effects in pituitary somatotroph tumor cells. J. Cell. Physiol. 236: 6974-6987.
3. Peculis, R., et al. 2022. Whole exome sequencing reveals novel risk genes of pituitary neuroendocrine tumors. PLoS ONE 17: e0265306.
4. Zhang, Q., et al. 2023. Single-cell sequencing identifies differentiation-related markers for molecular classification and recurrence prediction of PitNET. Cell Rep. Med. 4: 100934.

RESEARCH USE

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