SANTA CRUZ BIOTECHNOLOGY, INC.

Pit-1 (X-7): sc-442

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 2 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 is 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.

CHROMOSOMAL LOCATION

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

SOURCE

Pit-1 (X-7) is a rabbit polyclonal antibody produced by immunization with full length Pit-1 polyhistidine tagged fusion protein of rat origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-442 X, 200 µg/0.1 ml.

APPLICATIONS

Pit-1 (X-7) is recommended for detection of Pit-1 of mouse, rat and 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)], 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).

Pit-1 (X-7) is also recommended for detection of Pit-1 in additional species, including equine, canine, bovine and porcine.

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

Pit-1 (X-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

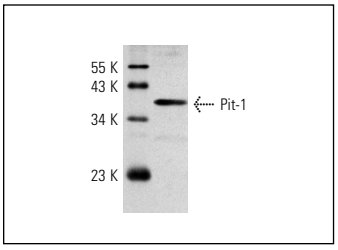
Molecular Weight of Pit-1: 31-35 kDa.

Positive Controls: F9 cell lysate: sc-2245, GH3 whole cell lysate: sc-364777 or rat pituitary gland extract: sc-364807.

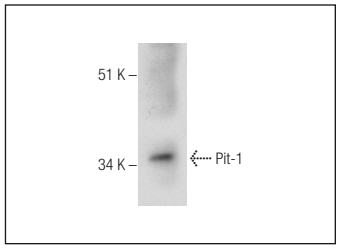
STORAGE

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

DATA



Pit-1 (X-7): sc-442. Western blot analysis of Pit-1 expression in F9 whole cell lysate.



Pit-1 (X-7): sc-442. Western blot analysis of Pit-1 expression in rat pituitary tissue extract.

SELECT PRODUCT CITATIONS

1. Kim, M.K., et al. 1996. A soluble transcription factor, Oct-1, is also found in the insoluble nuclear matrix and possesses silencing activity in its alanine-rich domain. Mol. Cell. Biol. 16: 4366-4377.
2. Kashiwabara, Y., et al. 2009. Functions of PIT1 in GATA2-dependent transactivation of the thyrotropin β promoter. J. Mol. Endocrinol. 42: 225-237.
3. Yang, X., et al. 2010. Appearance of the pituitary factor Pit-1 increases chromatin remodeling at hypersensitive site III in the human GH locus. J. Mol. Endocrinol. 45: 19-32.
4. Yamamoto, M., et al. 2011. Adult combined GH, prolactin, and TSH deficiency associated with circulating PIT-1 antibody in humans. J. Clin. Invest. 121: 113-119.
5. Guillaumond, F., et al. 2011. Chromatin remodeling as a mechanism for circadian prolactin transcription: rhythmic NONO and SFPQ recruitment to HLTF. FASEB J. 25: 2740-2756.
6. Vakili, H., et al. 2011. Transgenic mice expressing the human growth hormone gene provide a model system to study human growth hormone synthesis and secretion in non-tumor-derived pituitary cells: differential effects of dexamethasone and thyroid hormone. Mol. Cell. Endocrinol. 345: 48-57.
7. Diaz-Rodriguez, E., et al. 2012. Direct promoter induction of p19Arf by Pit-1 explains the dependence receptor RET/Pit-1/p53-induced apoptosis in the pituitary somatotroph cells. Oncogene 31: 2824-2835.

RESEARCH USE

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