SANTA CRUZ BIOTECHNOLOGY, INC.

PIAS 1 (H-175): sc-14016

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The IL-6-type family of cytokines, which includes IL-6 as well as a number of similar cytokines and growth factors, plays a significant role in regulating gene activation, proliferation and differentiation. Transcription factors of the Stat family are known to be involved in this signal transduction pathway, undergoing phosphorylation, dimerization and translocation to the nucleus upon activation. PIAS 1, for protein inhibitor of activated Stat1 (also designated Gu/RNA helicase II binding protein), binds specifically to Stat1, blocking Stat1 DNA-binding activity and inhibiting Stat1-mediated gene activation. PIAS 1 also binds to the Gu/RNA helicase II enzyme, leading to the proteolytic cleavage of Gu/RH-II. PIAS 3 similarly binds specifically to Stat3, blocking Stat3 DNA-binding activity and inhibiting Stat3-mediated gene activation.

REFERENCES

1. Akira, S., et al. 1994. Molecular cloning of APRF, a novel IFN-stimulated gene factor 3 p91-related transcription factor involved in the gp130-mediated signaling pathway. Cell 77: 63-71.
2. Zhong, Z., et al. 1994. Stat3: a Stat family member activated by tyrosine phosphorylation in response to epidermal growth factor and Interleukin-6. Science 264: 95-98.
3. Valdez, B.C., et al. 1997. Cloning and characterization of Gu/RH-II binding protein. Biochem. Biophys. Res. Commun. 234: 335-340.

CHROMOSOMAL LOCATION

Genetic locus: PIAS1 (human) mapping to 15q23; Pias1 (mouse) mapping to 9 B.

SOURCE

PIAS 1 (H-175) is a rabbit polyclonal antibody raised against amino acids 471-645 mapping near the C-terminus of PIAS 1 of human origin.

PRODUCT

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

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.

PROTOCOLS

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

APPLICATIONS

PIAS 1 (H-175) is recommended for detection of PIAS 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).

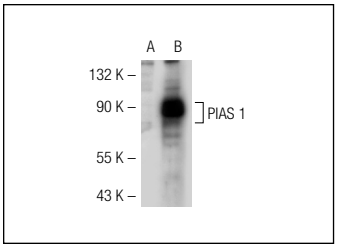
PIAS 1 (H-175) is also recommended for detection of PIAS 1 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for PIAS 1 siRNA (h): sc-36219, PIAS 1 siRNA (m): sc-36220, PIAS 1 shRNA Plasmid (h): sc-36219-SH, PIAS 1 shRNA Plasmid (m): sc-36220-SH, PIAS 1 shRNA (h) Lentiviral Particles: sc-36219-V and PIAS 1 shRNA (m) Lentiviral Particles: sc-36220-V.

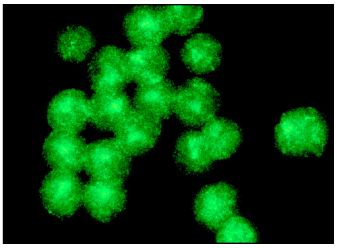
Molecular Weight of PIAS 1: 78 kDa.

Positive Controls: Daudi cell lysate: sc-2415 or PIAS 1 (m): 293T Lysate: sc-122561.

DATA



PIAS 1 (H-175): sc-14016. Western blot analysis of PIAS 1 expression in non-transfected: sc-117752 (**A**) and mouse PIAS 1 transfected: sc-122561 (**B**) 293T whole cell lysates.



PIAS 1 (H-175): sc-14016. Immunofluorescence staining of methanol-fixed Daudi cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Jones, M.C., et al. 2006. Regulation of the SUMO pathway sensitizes differentiating human endometrial stromal cells to progesterone. Proc. Natl. Acad. Sci. USA 103: 16272-16277.
2. Zhao, X., et al. 2007. Interaction between GATA-3 and the transcriptional coregulator PIAS 1 is important for the regulation of Th2 immune responses. J. Immunol. 179: 8297-8304.
3. Park, S.W., et al. 2007. SUMOylation of Tr2 orphan receptor involves Pml and fine-tunes Oct4 expression in stem cells. Nat. Struct. Mol. Biol. 14: 68-75.