

# PIAS 3 (H-169): sc-14017

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: PIAS3 (human) mapping to 1q21.1; Pias3 (mouse) mapping to 3 F2.1.

## SOURCE

PIAS 3 (H-169) is a rabbit polyclonal antibody raised against amino acids 451-619 mapping at the C-terminus of PIAS 3 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.

## APPLICATIONS

PIAS 3 (H-169) is recommended for detection of PIAS 3 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 3 (H-169) is also recommended for detection of PIAS 3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PIAS 3 siRNA (h): sc-37005, PIAS 3 siRNA (m): sc-37006, PIAS 3 shRNA Plasmid (h): sc-37005-SH, PIAS 3 shRNA Plasmid (m): sc-37006-SH, PIAS 3 shRNA (h) Lentiviral Particles: sc-37005-V and PIAS 3 shRNA (m) Lentiviral Particles: sc-37006-V.

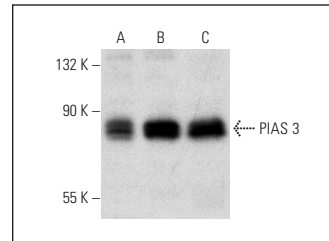
Molecular Weight of PIAS 3: 68 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or HL-60 whole cell lysate: sc-2209.

## STORAGE

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

## DATA



PIAS 3 (H-169): sc-14017. Western blot analysis of PIAS 3 expression in HeLa (A), K-562 (B) and HL-60 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Long, J., et al. 2004. Activation of Smad transcriptional activity by protein inhibitor of activated Stat3 (PIAS 3). *Proc. Natl. Acad. Sci. USA* 101: 99-104.
2. Jang, H.D., et al. 2004. PIAS 3 suppresses NFκB-mediated transcription by interacting with the p65/RelA subunit. *J. Biol. Chem.* 279: 24873-24880.
3. 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.
4. Qu, J., et al. 2007. Nitric oxide destabilizes PIAS 3 and regulates sumoylation. *PLoS ONE* 2: e1085.
5. Roukens, M.G., et al. 2008. Identification of a new site of sumoylation on Tel (ETV6) uncovers a PIAS-dependent mode of regulating Tel function. *Mol. Cell. Biol.* 28: 2342-2357.
6. Yoon, J.H., et al. 2015. Phosphorylation status determines the opposing functions of Smad2/Smad3 as STAT3 cofactors in TH17 differentiation. *Nat. Commun.* 6: 7600.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.


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