

# PIAS 3 (E-3): sc-48339

## 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.
4. Chung, C.D., et al. 1997. Specific inhibition of Stat3 signal transduction by PIAS 3. *Science* 278: 1803-1805.
5. Heinrich, P.C., et al. 1998. Interleukin-6 type cytokine signalling through the gp130/JAK/Stat pathway. *Biochem. J.* 334: 297-314.
6. Liu, B., et al. 1998. Inhibition of Stat1-mediated gene activation by PIAS 1. *Proc. Natl. Acad. Sci. USA* 95: 10626-10631.
7. Dabir, S., et al. 2009. The association and nuclear translocation of the PIAS3-Stat3 complex is ligand and time dependent. *Mol. Cancer Res.* 7: 1854-1860.

## CHROMOSOMAL LOCATION

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

## SOURCE

PIAS 3 (E-3) is a mouse monoclonal antibody raised against amino acids 451-619 of PIAS 3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain 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.

## APPLICATIONS

PIAS 3 (E-3) is recommended for detection of PIAS 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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); non cross-reactive with amino acids 453-550 of PIAS 3.

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.

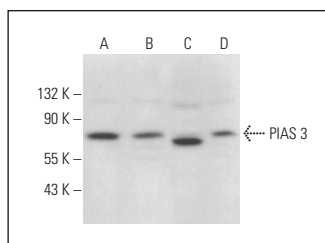
Molecular Weight of PIAS 3: 68 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, NIH/3T3 whole cell lysate: sc-2210 or MCF7 whole cell lysate: sc-2206.

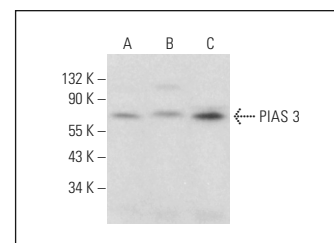
## RECOMMENDED SUPPORT REAGENTS

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



PIAS 3 (E-3): sc-48339. Western blot analysis of PIAS 3 expression in K-562 (A), HL-60 (B), NIH/3T3 (C) and MCF7 (D) whole cell lysates.



PIAS 3 (E-3): sc-48339. Western blot analysis of PIAS 3 expression in MCF7 (A), MDA-MB-231 (B) and MEG-01 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Siatecka, M., et al. 2015. Transcriptional activity of erythroid Krüppel-like factor (EKLF/KLF1) modulated by PIAS3 (protein inhibitor of activated Stat3). *J. Biol. Chem.* 290: 9929-9940.

## 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) for detailed protocols and support products.