

PIAS 3 (M-20): sc-8154

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., Nishio, Y., Inoue, M., Wang, X.J., Wei, S., Matusaka, T., Yoshida, K., Sudo, T., Naruto, M. and Kishimoto, T. 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., Wen, Z. and Darnell, J.E. Jr. 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., Henning, D., Perlaky, L., Bush, R.K. and Busch, H. 1997. Cloning and characterization of Gu/RH-II binding protein. *Biochem. Biophys. Res. Commun.* 234: 335-340.
4. Chung, C.D., Laio, J., Liu, B., Rao, X., Jay, P., Berta, P. and Schuai, K. 1997. Specific inhibition of Stat3 signal transduction by PIAS 3. *Science* 278: 1803-1805.
5. Heinrich, P.C., Behrmann, I., Muller-Newen, G., Schaper, F. and Graeve, L. 1998. Interleukin-6 type cytokine signalling through the gp130/JAK/Stat pathway. *Biochem. J.* 334: 297-314.

CHROMOSOMAL LOCATION

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

SOURCE

PIAS 3 (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PIAS 3 of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-8154 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 (M-20) 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), 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 (M-20) is also recommended for detection of PIAS 3 in additional species, including equine, 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: MCF7 whole cell lysate: sc-2206.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Levy, C., Nechushtan, H. and Razin, E. 2002. A new role for the Stat3 inhibitor, PIAS 3: a repressor of microphthalmia transcription factor. *J. Biol. Chem.* 277: 1962-1966.

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.



Try **PIAS 3 (C-12): sc-46682** or **PIAS 3 (E-3): sc-48339**, our highly recommended monoclonal alternatives to PIAS 3 (M-20).