SANTA CRUZ BIOTECHNOLOGY, INC.

PIAS 3 (C-12): sc-46682

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.

CHROMOSOMAL LOCATION

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

SOURCE

PIAS 3 (C-12) is a mouse monoclonal antibody raised against amino acids 451-619 of PIAS 3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PIAS 3 (C-12) is available conjugated to agarose (sc-46682 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-46682 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-46682 PE), fluorescein (sc-46682 FITC), Alexa Fluor® 488 (sc-46682 AF488), Alexa Fluor® 546 (sc-46682 AF546), Alexa Fluor® 594 (sc-46682 AF594) or Alexa Fluor® 647 (sc-46682 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-46682 AF680) or Alexa Fluor® 790 (sc-46682 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PIAS 3 (C-12) 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).

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.

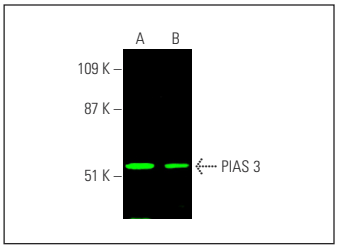
Molecular Weight of PIAS 3: 68 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, PIAS 3 (m): 293T Lysate: sc-122562 or NIH/3T3 whole cell lysate: sc-2210.

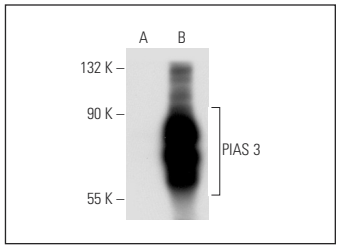
STORAGE

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

DATA



PIAS 3 (C-12): sc-46682. Near-infrared western blot analysis of PIAS 3 expression in K-562 (**A**) and NIH/3T3 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



PIAS 3 (C-12): sc-46682. Western blot analysis of PIAS 3 expression in non-transfected: sc-117752 (**A**) and mouse PIAS 3 transfected: sc-122562 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ban, R., et al. 2011. Mitotic kinase Aurora-B is regulated by SUMO-2/3 conjugation/deconjugation during mitosis. Genes Cells 16: 652-669.
2. Sundvall, M., et al. 2012. Protein inhibitor of activated Stat3 (PIAS 3) protein promotes SUMOylation and nuclear sequestration of the intracellular domain of ErbB4 protein. J. Biol. Chem. 287: 23216-23226.
3. Peuget, S., et al. 2014. Oxidative stress-induced p53 activity is enhanced by a redox-sensitive TP53INP1 SUMOylation. Cell Death Differ. 21: 1107-1118.
4. Wang, W., et al. 2014. PIASxα ligase enhances SUMO1 modification of PTEN protein as a SUMO E3 ligase. J. Biol. Chem. 289: 3217-3230.
5. Siatecka, M., et al. 2015. Transcriptional activity of erythroid Krüppel-like factor (EKLF/KLF1) modulated by PIAS 3 (protein inhibitor of activated Stat3). J. Biol. Chem. 290: 9929-9940.
6. Zhang, D., et al. 2017. Echinacoside alleviates UVB irradiation-mediated skin damage via inhibition of oxidative stress, DNA damage, and apoptosis. Oxid. Med. Cell. Longev. 2017: 6851464.
7. Chandhoke, A.S., et al. 2017. The PIAS3-Smurf2 sumoylation pathway suppresses breast cancer organoid invasiveness. Oncotarget 8: 21001-21014.
8. Ray, S., et al. 2018. Suppression of Stat3 NH_2-terminal domain chemosensitizes medulloblastoma cells by activation of protein inhibitor of activated Stat3 via de-repression by microRNA-21. Mol. Carcinog. 57: 536-548.
9. Theurillat, I., et al. 2020. Extensive SUMO modification of repressive chromatin factors distinguishes pluripotent from somatic cells. Cell Rep. 32: 108146.

RESEARCH USE

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