SANTA CRUZ BIOTECHNOLOGY, INC.

PIAS 1/3 (F-3): sc-271172

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, PIAS3 (human) mapping to 1q21.1; Pias1 (mouse) mapping to 9 B, Pias3 (mouse) mapping to 3 F2.1.

SOURCE

PIAS 1/3 (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 14-43 near the N-terminus of PIAS 1 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 1/3 (F-3) is available conjugated to agarose (sc-271172 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271172 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271172 PE), fluorescein (sc-271172 FITC), Alexa Fluor® 488 (sc-271172 AF488), Alexa Fluor® 546 (sc-271172 AF546), Alexa Fluor® 594 (sc-271172 AF594) or Alexa Fluor® 647 (sc-271172 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271172 AF680) or Alexa Fluor® 790 (sc-271172 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271172 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

PIAS 1/3 (F-3) is recommended for detection of PIAS 1 and 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).

PIAS 1/3 (F-3) is also recommended for detection of PIAS 1 and PIAS 3 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for PIAS 1/3 siRNA (h): sc-44013, PIAS 1/3 shRNA Plasmid (h): sc-44013-SH and PIAS 1/3 shRNA (h) Lentiviral Particles: sc-44013-V.

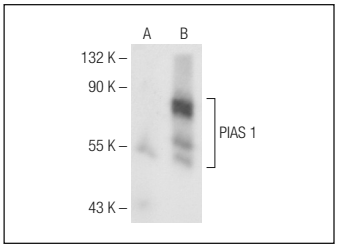
Molecular Weight of PIAS 1/3: 78/68 kDa.

Positive Controls: KNRK nuclear extract: sc-2141, HeLa whole cell lysate: sc-2200 or PIAS 1 (m): 293T Lysate: sc-122561.

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 1/3 (F-3): sc-271172. 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.

SELECT PRODUCT CITATIONS

1. Dziemidowicz, M., et al. 2019. The role of interleukin-6 in intracellular signal transduction after chronic β-adrenergic stimulation in mouse myocardium. Arch. Med. Sci. 15: 1565-1575.

RESEARCH USE

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