SANTA CRUZ BIOTECHNOLOGY, INC.

PIASy (C-11): sc-166706

BACKGROUND

The IL-6-type family of cytokines, which includes IL-6 and 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 involved in IL-6 family-mediated signal transduction pathways, and upon activation undergo phosphorylation, dimerization and translocation to the nucleus. The duration and intensity of a cell's response to cytokines can be adjusted by the effect of several regulatory mechanisms. One example involves the protein inhibitor of activated signal transducer and activator of transcription (Stat) family (PIAS family) of proteins, which act as negative regulators of Stats in cytokine signaling. PIAS proteins are able to co-activate steroid receptor-dependent transcription as well. Human PIASy is a 510 amino acid transcriptional corepressor of the androgen receptor (AR). In addition, PIASy may regulate p53-mediated events and may direct p53 into a transactivation-independent mode of apoptosis.

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. Heinrich, P.C., et al. 1998. Interleukin-6-type cytokine signalling through the gp130/Jak/STAT pathway. Biochem. J. 334: 297-314.

CHROMOSOMAL LOCATION

Genetic locus: PIAS4 (human) mapping to 19p13.3.

SOURCE

PIASy (C-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 80-120 near the N-terminus of PIASy 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.

PIASy (C-11) is available conjugated to agarose (sc-166706 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166706 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166706 PE), fluorescein (sc-166706 FITC), Alexa Fluor® 488 (sc-166706 AF488), Alexa Fluor® 546 (sc-166706 AF546), Alexa Fluor® 594 (sc-166706 AF594) or Alexa Fluor® 647 (sc-166706 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166706 AF680) or Alexa Fluor® 790 (sc-166706 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166706 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

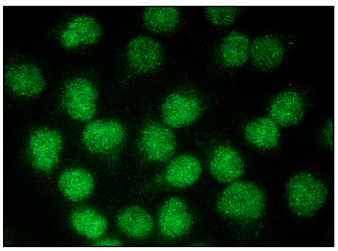
PIASy (C-11) is recommended for detection of PIASy of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PIASy siRNA (h): sc-40851, PIASy shRNA Plasmid (h): sc-40851-SH and PIASy shRNA (h) Lentiviral Particles: sc-40851-V.

Molecular Weight of PIASy: 57 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233.

DATA



PIASy (C-11): sc-166706. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Albaghdadi, A.J. and Kan, F.W. 2012. Endometrial receptivity defects and impaired implantation in diabetic NOD mice. Biol. Reprod. 87: 30.
2. Yan, C., et al. 2016. Protein inhibitor of activated STAT Y (PIASy) regulates Insulin secretion by interacting with LIM homeodomain transcription factor Isl1. Sci. Rep. 6: 39308.
3. Liu, J.C.Y., et al. 2021. Mechanism and function of DNA replication-independent DNA-protein crosslink repair via the SUMO-RNF4 pathway. EMBO J. 40: e107413.
4. Hu, C.C., et al. 2022. Cardiac-targeted PIASy gene silencing mediates deSUMOylation of caveolin-3 and prevents ischemia/reperfusion-induced $Na_v1.5$ downregulation and ventricular arrhythmias. Mil. Med. Res. 9: 58.
5. Wang, T., et al. 2023. Downregulation of cardiac PIASy inhibits Cx43 SUMOylation and ameliorates ventricular arrhythmias in a rat model of myocardial ischemia/reperfusion injury. Chin. Med. J. 136: 1349-1357.

STORAGE

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

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