SANTA CRUZ BIOTECHNOLOGY, INC.

PIASy (h2): 293T Lysate: sc-159739

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 coactivate 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., 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. 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.
4. Liu, B., Liao, J., Rao, X., Kushner, S.A., Chung, C.D., Chang, D.D. and Shuai, K. 1998. Inhibition of Stat1-mediated gene activation by PIAS1. Proc. Natl. Acad. Sci. USA 95: 10626-10631.
5. Starr, R. and Hilton, D. 1999. Negative regulation of the JAK/STAT pathway. Bioessays 21: 47-52.
6. Kotaja, N., Aittomaki, S., Silvennoinen, O., Palvimo, J.J. and Janne, O.A. 2000. ARIP3 (androgen receptor-interacting protein 3) and other PIAS (protein inhibitor of activated STAT) proteins differ in their ability to modulate steroid receptor-dependent transcriptional activation. Mol. Endocrinol. 14: 1986-2000.
7. Liu, B. and Shuai, K. 2001. Induction of apoptosis by protein inhibitor of activated Stat1 through c-Jun NH_2-terminal kinase activation. J. Biol. Chem. 276: 36624-36631.
8. Nelson, V., Davis, G.E. and Maxwell, S.A. 2001. A putative protein inhibitor of activated STAT (PIASy) interacts with p53 and inhibits p53-mediated transactivation but not apoptosis. Apoptosis 6: 221-234.
9. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605989. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

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

PRODUCT

PIASy (h2): 293T Lysate represents a lysate of human PIASy transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PIASy (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive PIASy antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.