SANTA CRUZ BIOTECHNOLOGY, INC.

PICOT (JF-6): sc-100601

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PICOT, also known as GLRX3 (glutaredoxin 3), GRX3, GRX4, GLRX4, HUSSY-22, TXNL2 or TXNL3, is a 335 amino acid protein that contains one thioredoxin domain and two glutaredoxin domains. Localized to the cytoplasm and the cell cortex, PICOT is thought to play a role in regulating the thioredoxin system and may weakly interact with PKC τ (protein kinase C τ). Through its ability to regulate the thioredoxin pathway, PICOT inhibits cardiac hypertrophy (a thickening of the heart muscle usually caused by high blood pressure) by negatively regulating NFAT (nuclear factor of activated T cells) signaling. Although PICOT contains one thioredoxin domain, it lacks the two redox-reactive cysteines that are required for catalytic activity, suggesting that PICOT lacks thioredoxin function. PICOT is expressed in testis, heart and spleen with lower levels detected in thymus, lung, colon, placenta and small intestine.

REFERENCES

1. Witte, S., Villalba, M., Bi, K., Liu, Y., Isakov, N. and Altman, A. 2000. Inhibition of the c-Jun N-terminal kinase/AP-1 and NFκB pathways by PICOT, a novel protein kinase C-interacting protein with a thioredoxin homology domain. J. Biol. Chem. 275: 1902-1909.
2. Isakov, N., Witte, S. and Altman, A. 2000. PICOT-HD: a highly conserved protein domain that is often associated with thioredoxin and glutaredoxin modules. Trends Biochem. Sci. 25: 537-539.
3. Babichev, Y. and Isakov, N. 2001. Tyrosine phosphorylation of PICOT and its translocation to the nucleus in response of human T cells to oxidative stress. Adv. Exp. Med. Biol. 495: 41-45.
4. Rahlfs, S., Fischer, M. and Becker, K. 2001. *Plasmodium falciparum* possesses a classical glutaredoxin and a second, glutaredoxin-like protein with a PICOT homology domain. J. Biol. Chem. 276: 37133-37140.
5. Dorn, G.W. 2006. Containing hypertrophy with a PICOT fence. Circ. Res. 99: 228-230.
6. Jeong, D., Cha, H., Kim, E., Kang, M., Yang, D.K., Kim, J.M., Yoon, P.O., Oh, J.G., Bernecker, O.Y., Sakata, S., Le, T.T., Cui, L., Lee, Y.H., Kim, d.o. H., Woo, S.H., Liao, R., Hajjar, R.J. and Park, W.J. 2006. PICOT inhibits cardiac hypertrophy and enhances ventricular function and cardiomyocyte contractility. Circ. Res. 99: 307-314.
7. Jeong, D., Kim, J.M., Cha, H., Oh, J.G., Park, J., Yun, S.H., Ju, E.S., Jeon, E.S., Hajjar, R.J. and Park, W.J. 2008. PICOT attenuates cardiac hypertrophy by disrupting calcineurin-NFAT signaling. Circ. Res. 102: 711-719.

CHROMOSOMAL LOCATION

Genetic locus: GLRX3 (human) mapping to 10q26.3.

SOURCE

PICOT (JF-6) is a mouse monoclonal antibody raised against recombinant PICOT of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PICOT (JF-6) is recommended for detection of PICOT of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PICOT siRNA (h): sc-76132, PICOT shRNA Plasmid (h): sc-76132-SH and PICOT shRNA (h) Lentiviral Particles: sc-76132-V.

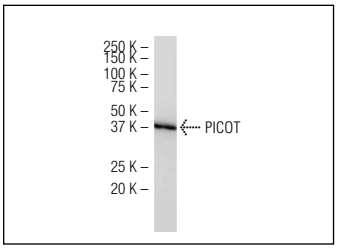
Molecular Weight of PICOT: 38 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



PICOT (JF-6): sc-100601. Western blot analysis of PICOT expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. He, F., Wei, L., Luo, W., Liao, Z., Li, B., Zhou, X., Xiao, X., You, J., Chen, Y., Zheng, S., Li, P., Murata, M., Huang, G. and Zhang, Z. 2016. Glutaredoxin 3 promotes nasopharyngeal carcinoma growth and metastasis via EGFR/Akt pathway and independent of Ros. Oncotarget 7: 37000-37012.

STORAGE

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

PROTOCOLS

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