

# PICOT (E-19): sc-69308

## 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 2 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  $\tau$  (protein kinase C  $\tau$ ). 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 NF $\kappa$ B 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, do. 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; Glrx3 (mouse) mapping to 7 F4.

## SOURCE

PICOT (E-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PICOT of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-69308 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PICOT (E-19) is recommended for detection of PICOT of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PICOT (E-19) is also recommended for detection of PICOT in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PICOT siRNA (h): sc-76132, PICOT siRNA (m): sc-76133, PICOT shRNA Plasmid (h): sc-76132-SH, PICOT shRNA Plasmid (m): sc-76133-SH, PICOT shRNA (h) Lentiviral Particles: sc-76132-V and PICOT shRNA (m) Lentiviral Particles: sc-76133-V.

Molecular Weight of PICOT: 38 kDa.

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

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.