

p-TAO2 (Ser 181): sc-135712

BACKGROUND

Several mammalian kinases have been identified with sequence similarity to the *Saccharomyces cerevisiae* Serine/Threonine kinase Ste20. Ste20 is involved in relaying signals from G protein-coupled receptors to cytosolic MAP kinase cascades, and it lies upstream of a MEK kinase. Thousand and one amino acid protein 2 (TAO2), also designated prostate-derived Ste20-like kinase 1 (PSK1) or kinase from chicken homolog C (KFC-C), belongs to the Ste20 subfamily of the Ser/Thr protein kinase family. TAO2 acts as an activator of the JNK MAP kinase pathway through the specific activation of MKK3 and MKK6 kinases. It is a multi-pass membrane protein detected in cytoplasmic vesicle membranes. TAO2 is ubiquitously expressed with highest levels found in brain and testes. Mouse, rat and human TAO2 are phosphorylated on Ser 181 in the activation loop, which allows the conformational activation of TAO2.

REFERENCES

- Moore, T.M., et al. 2000. PSK, a novel STE20-like kinase derived from prostatic carcinoma that activates the c-Jun N-terminal kinase mitogen-activated protein kinase pathway and regulates actin cytoskeletal organization. *J. Biol. Chem.* 275: 4311-4322.
- Yustein, J.T., et al. 2003. Comparative studies of a new subfamily of human Ste20-like kinases: homodimerization, subcellular localization, and selective activation of MKK3 and p38. *Oncogene* 22: 6129-6141.
- Zhou, T., et al. 2004. Crystal structure of the TAO2 kinase domain: activation and specificity of a Ste20p MAP3K. *Structure* 12:1891-1900.
- Takekawa, M., et al. 2005. Conserved docking site is essential for activation of mammalian MAP kinase kinases by specific MAP kinase kinase kinases. *Mol. Cell* 18: 295-306.
- Zhou, T.J., et al. 2006. Crystal structure of the MAP3K TAO2 kinase domain bound by an inhibitor staurosporine. *Acta Biochim. Biophys. Sin.* 38: 385-392.
- Zihni, C., et al. 2007. Prostate-derived sterile 20-like kinase 1- α induces apoptosis. JNK- and caspase-dependent nuclear localization is a requirement for membrane blebbing. *J. Biol. Chem.* 282: 6484-6493.

CHROMOSOMAL LOCATION

Genetic locus: TAO2 (human) mapping to 16p11.2; Taok2 (mouse) mapping to 7 F3.

SOURCE

p-TAO2 (Ser 181) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 181 phosphorylated TAO2 of human origin.

PRODUCT

Each vial contains IgG in 100 μ l of 10 mM HEPES with 150 mM NaCl, 50% glycerol and < 0.1% BSA.

RESEARCH USE

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

APPLICATIONS

p-TAO2 (Ser 181) is recommended for detection of Ser 181 phosphorylated TAO2 of mouse, rat, human, *Xenopus laevis* and zebrafish origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and immunoprecipitation [1-2 μ l per 100-500 μ g of total protein (1 ml of cell lysate)].

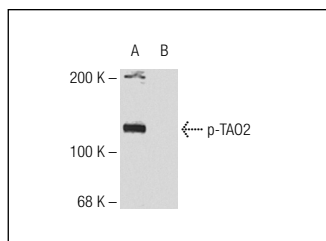
Suitable for use as control antibody for TAO2 siRNA (h): sc-61642, TAO2 shRNA Plasmid (h): sc-61642-SH and TAO2 shRNA (h) Lentiviral Particles: sc-61642-V.

Molecular Weight of p-TAO2: 138 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p-TAO2 (Ser 181): sc-135712. Western blot analysis of TAO2 phosphorylation in untreated (A) and lambda protein phosphatase (sc-200312A) treated (B) rat prefrontal cortex tissue extracts.

SELECT PRODUCT CITATIONS

- de Anda, F.C., et al. 2012. Autism spectrum disorder susceptibility gene TAO2 affects basal dendrite formation in the neocortex. *Nat. Neurosci.* 15: 1022-1031.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

PROTOCOLS

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