

# p-DARPP-32 (Thr 34): sc-21601

## BACKGROUND

Dopaminergic signaling pathways, which are essential for multiple brain functions, are abnormal in several neurological disorders, such as schizophrenia, Parkinson's disease and drug abuse. DARPP-32 is abundant in neurons that receive dopaminergic input. Activation of PKA and the consequent phosphorylation of DARPP-32 on Thr 34 occurs in response to dopamine acting upon D1-like receptors. Dopamine interaction with D2-like receptors results in the inhibition of PKA activation, the activation of protein phosphatase 2B and the consequent dephosphorylation of DARPP-32 at Thr 34. Phosphorylated DARPP-32 at Thr 34 is a potent inhibitor of PP-1. Phosphorylation of DARPP-32 on Ser 137 by casein kinase inhibits the dephosphorylation of Thr 34 by calcineurin. Phosphorylation of DARPP-32 on Thr 75 by Cdk5 inhibits PKA by a competitive mechanism *in vitro*. Decreasing the phosphorylation of DARPP-32 Thr 75 increases the dopamine-induced phosphorylation of PKA substrates.

## CHROMOSOMAL LOCATION

Genetic locus: PPP1R1B (human) mapping to 17q12; Ppp1r1b (mouse) mapping to 11 D.

## SOURCE

p-DARPP-32 (Thr 34) is available as either goat (sc-21601) or rabbit (sc-21601-R) affinity purified polyclonal antibody raised against a short amino acid sequence containing Thr 34 phosphorylated DARPP-32 of human origin.

## PRODUCT

Each vial contains either 100 µg (sc-21601) or 200 µg (sc-21601-R) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21601 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

p-DARPP-32 (Thr 34) is recommended for detection of Thr 34 phosphorylated DARPP-32 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-DARPP-32 (Thr 34) is also recommended for detection of correspondingly phosphorylated DARPP-32 in additional species, including canine, bovine and porcine.

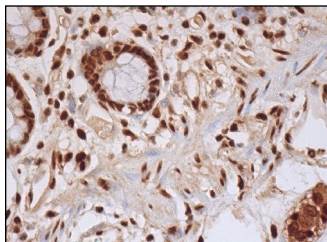
Suitable for use as control antibody for DARPP-32 siRNA (h): sc-35173, DARPP-32 siRNA (m): sc-35174, DARPP-32 siRNA (r): sc-156003, DARPP-32 shRNA Plasmid (h): sc-35173-SH, DARPP-32 shRNA Plasmid (m): sc-35174-SH, DARPP-32 shRNA Plasmid (r): sc-156003-SH, DARPP-32 shRNA (h) Lentiviral Particles: sc-35173-V, DARPP-32 shRNA (m) Lentiviral Particles: sc-35174-V and DARPP-32 shRNA (r) Lentiviral Particles: sc-156003-V.

Molecular Weight of p-DARPP-32: 32 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-21601): 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), for rabbit primary antibody (sc-21601-R): 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) Immunofluorescence: for goat primary antibody (sc-21601): 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, for rabbit primary antibody (sc-21601-R): use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



p-DARPP-32 (Thr 34)-R: sc-21601-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing nuclear and cytoplasmic staining of glandular cells, endothelial cells, peripheral nerve/ganglion cells and interstitial cells.

## SELECT PRODUCT CITATIONS

1. Pozzi, L., et al. 2003. Opposite regulation by typical and atypical antipsychotics of ERK1/2, CREB and Elk-1 phosphorylation in mouse dorsal striatum. *J. Neurochem.* 86: 451-459.
2. Grauer, S.M., et al. 2009. Phosphodiesterase 10A inhibitor activity in preclinical models of the positive, cognitive, and negative symptoms of schizophrenia. *J. Pharmacol. Exp. Ther.* 331: 574-590.
3. Rosenkranz, K., et al. 2012. Proteomic analysis of alterations induced by perinatal hypoxic-ischemic brain injury. *J. Proteome Res.* 11: 5794-5803.
4. Polentes, J., et al. 2012. Human induced pluripotent stem cells improve stroke outcome and reduce secondary degeneration in the recipient brain. *Cell Transplant.* 21: 2587-2602.

## STORAGE

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