

DARPP-32 (N-19): sc-8483

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 (for dopamine and adenosine 3',5'-monophosphate-regulated phosphoprotein) is abundant in neurons that receive dopaminergic input. Activation of PKA and the consequent phosphorylation of DARPP-32 on threonine 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. Neurotransmitters other than dopamine may also be able to stimulate the phosphorylation or dephosphorylation of DARPP-32. Phosphorylated DARPP-32 is a potent inhibitor of PP-1.

REFERENCES

1. Walaas, S.I., et al. 1984. DARPP-32, a dopamine- and adenosine 3':5'-monophosphate-regulated phosphoprotein enriched in dopamine-innervated brain regions. I. Regional and cellular distribution in the rat brain. *J. Neurosci.* 4: 84-98.
2. Hemmings, H.C., Jr., et al. 1984. DARPP-32, a dopamine-regulated neuronal phosphoprotein, is a potent inhibitor of protein phosphatase-1. *Nature* 310: 503-505.
3. Hemmings, H.C., Jr., et al. 1984. DARPP-32, a dopamine- and adenosine 3':5'-monophosphate-regulated neuronal phosphoprotein. I. Amino acid sequence around the phosphorylated threonine. *J. Biol. Chem.* 259: 14486-14490.
4. Nishi, A., et al. 1997. Bidirectional regulation of DARPP-32 phosphorylation by dopamine. *J. Neurosci.* 17: 8147-8155.
5. Fienberg, A.A., et al. 1998. DARPP-32: regulator of the efficacy of dopaminergic neuro-transmission. *Science* 281: 838-842.

CHROMOSOMAL LOCATION

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

SOURCE

DARPP-32 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of DARPP-32 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8483 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

DARPP-32 (N-19) is recommended for detection of DARPP-32 of mouse, rat and 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)], 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).

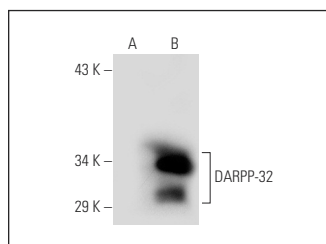
DARPP-32 (N-19) is also recommended for detection of DARPP-32 in additional species, including canine, bovine, porcine and avian.

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

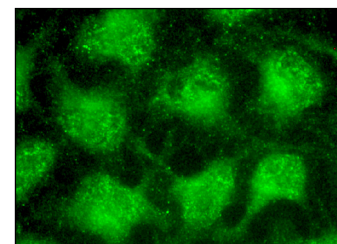
Molecular Weight of DARPP-32: 32 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or DARPP-32 (m): 293T Lysate: sc-125226.

DATA



DARPP-32 (N-19): sc-8483. Western blot analysis of DARPP-32 expression in non-transfected: sc-117752 (A) and mouse DARPP-32 transfected: sc-125226 (B) 293T whole cell lysates.



DARPP-32 (N-19): sc-8483. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yang, Z., et al. 2008. Neonatal hypoxic/ischemic brain injury induces production of calretinin-expressing interneurons in the striatum. *J. Comp. Neurol.* 511: 19-33.
2. Benderska, N., et al. 2010. DARPP-32 binds to tra2-β1 and influences alternative splicing. *Biochim. Biophys. Acta* 1799: 448-453.
3. Reimers-Kipping, S., et al. 2011. Humanized Foxp2 specifically affects cortico-basal ganglia circuits. *Neuroscience* 175: 75-84.

RESEARCH USE

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



Try **DARPP-32 (H-3): sc-271111** or **DARPP-32 (G-5): sc-398360**, our highly recommended monoclonal alternatives to DARPP-32 (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **DARPP-32 (H-3): sc-271111**.