

# DARPP-32 (H-3): sc-271111

## 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

- 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.
- 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

DARPP-32 (H-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-34 at the N-terminus of DARPP-32 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DARPP-32 (H-3) is available conjugated to agarose (sc-271111 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271111 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271111 PE), fluorescein (sc-271111 FITC), Alexa Fluor® 488 (sc-271111 AF488), Alexa Fluor® 546 (sc-271111 AF546), Alexa Fluor® 594 (sc-271111 AF594) or Alexa Fluor® 647 (sc-271111 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271111 AF680) or Alexa Fluor® 790 (sc-271111 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271111 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## 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 (H-3) is recommended for detection of DARPP-32 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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).

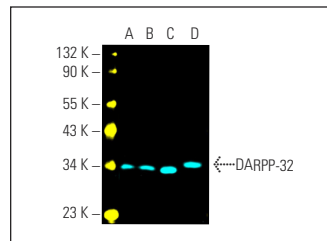
DARPP-32 (H-3) is also recommended for detection of DARPP-32 in additional species, including canine, bovine and avian.

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.

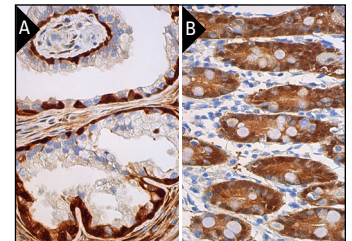
Molecular Weight of DARPP-32: 32 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

## DATA



DARPP-32 (H-3) Alexa Fluor® 647: sc-271111 AF647. Direct fluorescent western blot analysis of DARPP-32 expression in COLO 205 (A) and PC-3 (B) whole cell lysates and mouse brain (C) and rat brain (D) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 488: sc-516790.



DARPP-32 (H-3): sc-271111. Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate (A) and human duodenum (B) tissue showing cytoplasmic and nuclear staining of glandular cells.

## SELECT PRODUCT CITATIONS

- Rosenkranz, K., et al. 2012. Proteomic analysis of alterations induced by perinatal hypoxic-ischemic brain injury. *J. Proteome Res.* 11: 5794-5803.
- Jaric, I., et al. 2019. Chromatin organization in the female mouse brain fluctuates across the oestrous cycle. *Nat. Commun.* 10: 2851.
- Co, M., et al. 2020. Cortical Foxp2 supports behavioral flexibility and developmental dopamine D1 receptor expression. *Cereb. Cortex* 30: 1855-1870.
- Chiazza, F., et al. 2021. The stroke-induced increase of somatostatin-expressing neurons is inhibited by diabetes: a potential mechanism at the basis of impaired stroke recovery. *Cell. Mol. Neurobiol.* 41: 591-603.

## RESEARCH USE

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