PRODUCT INFORMATION

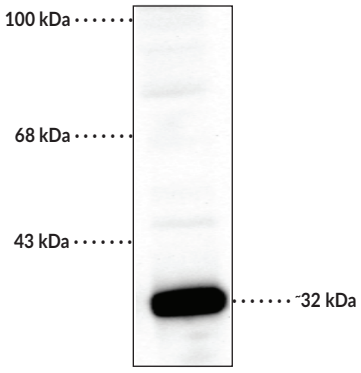
DARPP-32 Polyclonal Antibody

Item No. 29259

Overview and Properties

Contents: This vial contains 100 µl of polyclonal antibody prepared from pooled rabbit serum *via* chromatography on an affinity column prepared with the N-terminal peptide used as antigen.
Synonym: Protein Phosphatase 1 Regulatory Subunit 1B
Immunogen: Peptide corresponding to amino acid residues from the N-terminal region of rat DARPP-32 conjugated to KLH
Molecular Weight: ~32 kDa
Species Reactivity: (+) Mouse, rat
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥1 year
Storage Buffer: 10 mM HEPES, pH 7.5, with 150 mM sodium chloride, 100 µg/ml BSA, and 50% glycerol
Host: Rabbit
Applications: Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:250 for IHC and 1:1,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



WB of rat hippocampal lysate showing specific immunolabeling of the ~32 kDa DARPP protein. DARPP-32 Polyclonal Antibody was used as the detection antibody.

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Description

Dopamine and cAMP-regulated phosphoprotein of molecular weight 32 kDa (DARPP-32) is a member of the protein phosphatase inhibitor 1 family and is encoded by the *PPP1R1B* gene in humans.[1] It is primarily expressed in medium spiny neurons of dopamine-innervated brain regions and is localized to the cytoplasm.[2] DARPP-32 contains multiple phosphorylation sites that allow it to function as a central regulator and integrator of signaling cascades induced by a variety of neurotransmitters, neuropeptides, and psychostimulatory agents. It also contains a protein phosphatase 1 (PP1) binding domain.[3] DARPP-32 inhibits PP1 when phosphorylated at threonine 34 (Thr^{34}) by PKA and inhibits PKA when phosphorylated at Thr^{75} by cyclin-dependent kinase 5 (Cdk5). *Ppp1r1b*$^{-/-}$ mice have decreased amphetamine-induced GABA and dopamine release in the striatum and are less susceptible to catalepsy induced by raclopride (Item No. 17422) compared to wild-type mice.[4] Increased DARPP-32 protein levels have been identified in breast, prostate, gastric, and colon cancer tumors.[5] DARPP-32 levels are also increased in postmortem-derived dorsolateral prefrontal cortex from individuals with schizophrenia or bipolar disorder.[6] Cayman's DARPP-32 Polyclonal Antibody can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes DARPP-32 at ~32 kDa from mouse and rat samples.

References

1. Meyer-Lindenberg, A., Straub, R.E., Lipska, B.K., *et al*. Genetic evidence implicating DARPP-32 in human frontostriatal structure, function, and cognition. *J. Clin. Invest*. **117(3)**, 672-682 (2007).
2. Yger, M. and Girault, J.A. DARPP-32, jack of all trades... master of which? *Front. Behav. Neurosci*. **5**, 56 (2011).
3. Greengard, P., Allen, P.B., and Nairn, A.C. Beyond the dopamine receptor: The DARPP-32/protein phosphatase-1 cascade. *Neuron*. **23(3)**, 435-447 (1999).
4. Fienberg, A.A., Hiroi, N., Mermelstein, P.G., *et al*. DARPP-32: Regulator of the efficacy of dopaminergic neurotransmission. *Science* **281(5378)**, 838-842 (1998).
5. Belkhiri, A., Zhu, S., and El-Rifai, W. DARPP-32: From neurotransmission to cancer. *Oncotarget* **7(14)**, 17631-17640 (2016).
6. Ishikawa, M., Mizukami, K., Iwakiri, M., *et al*. Immunohistochemical and immunoblot analysis of dopamine and cyclic AMP-regulated phosphoprotein, relative molecular mass. *Prog. Neuropsychopharmacol. Biol. Psychiatry* **31(6),** 1177-1181 (2007).

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