PRODUCT INFORMATION

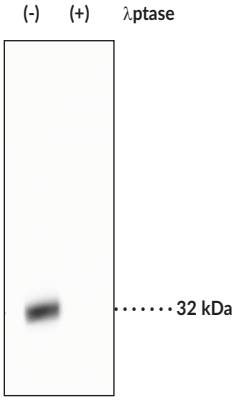
DARPP-32 (Phospho-Thr^{34}) Polyclonal Antibody

Item No. 10603

Overview and Properties

Contents:	This vial contains 100 µl of affinity-purified rabbit polyclonal antibody.
Immunogen:	Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr^{34} site of rat DARPP-32
Molecular Weight:	~32 kDa
Cross Reactivity:	(+) DARPP-32 (phospho-Thr^{34}); (-) Unphosphorylated DARPP-32
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 BSA per ml, and 50% glycerol
Host:	Rabbit
Applications:	Western blot (WB); the recommended starting dilution for WB is 1:1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



(-): WB of rat striatal lysate showing specific immunolabeling of the ~32 kDa DARPP-32 phosphorylated at Thr^{34}.
(+): Phosphospecificity is shown where immunolabeling is completely eliminated by blot treatment with λ phosphatase (λptase, 1,200 units for 30 min.).

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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, when phosphorylated at the threonine in position 34 (phospho-Thr^{34}) by PKA, is a PP1 inhibitor.[4] Phosphorylation of DARPP-32 at Thr^{34} is induced by GABA in rat striatal and substantia nigra slices.[5] Mice expressing a point mutation of Thr^{34} (T34A) in DARPP-32, which abolishes its phosphorylation, have reduced cocaine-induced conditioned place preference compared to wild-type mice.[6] DARPP-32 (phospho-Thr^{34}) levels are decreased in postmortem-derived prefrontal cortex from individuals with schizophrenia.[7] Cayman's DARPP-32 (Phospho-Thr^{34}) Polyclonal Antibody can be used for Western blot (WB) applications. The antibody recognizes DARPP-32 (phospho-Thr^{34}) at approximately 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).
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4. 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).
5. Snyder, G.L., Fisone, G., and Greengard, P. Phosphorylation of DARPP-32 is regulated by GABA in rat striatum and substantia nigra. *J. Neurochem.* **63(5)**, 1766-1771 (1994).
6. Zachariou, V., Sgambato-Faure, V., Sasaki, T., *et al.* Phosphorylation of DARPP-32 at threonine-34 is required for cocaine action. *Neuropsychopharmacology* **31(3)**, 555-562 (2006).
7. Wang, H., Farhan, M., Xu, J., *et al.* The involvement of DARPP-32 in the pathophysiology of schizophrenia. *Oncotarget* **8(32)**, 53791-53803 (2017).

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