

## Produktinformation



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### SZABO-SCANDIC HandelsgmbH

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# **PRODUCT** INFORMATION



DARPP-32 (Phospho-Thr<sup>34</sup>) Polyclonal Antibody

Item No. 10603

#### **Overview and Properties**

Contents: Immunogen:	This vial contains 100 $\mu$ l of affinity-purified rabbit polyclonal antibody. Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr <sup>34</sup> site of rat DARPP-32
Molecular Weight:	~32 kDa
Cross Reactivity:	(+) DARPP-32 (phospho-Thr <sup>34</sup> ); (-) Unphosphorylated DARPP-32
<b>Species Reactivity:</b>	(+) 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 $\mu g$ 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

(+) (-) λptase



(-): WB of rat striatal lysate showing specific immunolabeling of the ~32 kDa DARPP-32 phosphorylated at Thr<sup>34</sup>.

(+): Phosphospecificity is shown where immunolabeling is completely eliminated by blot treatment with  $\lambda$  phosphatase (λptase, 1,200 units for 30 min.).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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#### CAYMAN CHEMICAL

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# **PRODUCT** INFORMATION



#### 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.<sup>1</sup> It is primarily expressed in medium spiny neurons of dopamine-innervated brain regions and is localized to the cytoplasm.<sup>2</sup> 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.<sup>3</sup> DARPP-32, when phosphorylated at the threonine in position 34 (phospho-Thr<sup>34</sup>) by PKA, is a PP1 inhibitor.<sup>4</sup> Phosphorylation of DARPP-32 at Thr<sup>34</sup> is induced by GABA in rat striatal and substantia nigra slices.<sup>5</sup> Mice expressing a point mutation of Thr<sup>34</sup> (T34A) in DARPP-32, which abolishes its phosphorylation, have reduced cocaine-induced conditioned place preference compared to wild-type mice.<sup>6</sup> DARPP-32 (phospho-Thr<sup>34</sup>) levels are decreased in postmortem-derived prefrontal cortex from individuals with schizophrenia.<sup>7</sup> Cayman's DARPP-32 (Phospho-Thr<sup>34</sup>) Polyclonal Antibody can be used for Western blot (WB) applications. The antibody recognizes DARPP-32 (phospho-Thr<sup>34</sup>) 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).
- 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. 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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