

Anti-Phospho-Thr⁷⁵ DARPP-32 Antibody



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Catalog #: p1025-75

Size: 100 µl

Cite this Antibody: PhosphoSolutions Cat# p1025-75, RRID:AB_2492069

Host	Applications	Species Tested	Species Reactivity*	Molecular Weight
Rabbit	WB 1:1000	M, R	B, C, Ch, H, NHP	~32 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

Biological Significance: DARPP-32 is a dopamine (DA) and cAMP-regulated ~32 kDa phosphoprotein that is associated with dopaminergic neurons (Fienberg et al., 1998). The protein inhibits protein phosphatase I when it is phosphorylated on Thr³⁴. In contrast, when DARPP-32 is phosphorylated on Thr⁷⁵ the protein acts as an inhibitor of PKA (Bibb et al., 1999). Phosphorylation of DARPP-32 is thought to play a critical role in the regulation of dopaminergic neurotransmission. In addition, the activity of DARPP-32 is also thought to play important roles in the actions of alcohol, caffeine and Prozac® (Maldve et al., 2002; Lindskog et al., 2002; Svenningsson et al., 2002).

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr⁷⁵ of rat DARPP-32.

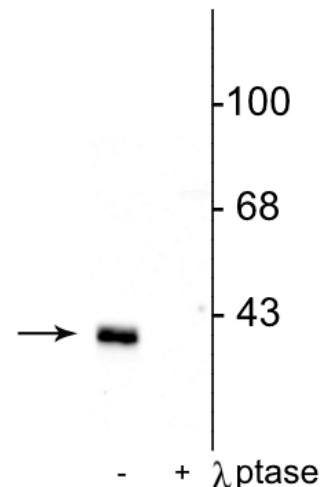
Antibody Specificity: Specific for endogenous levels of the ~32 kDa DARPP-32 protein phosphorylated at Thr⁷⁵. Immunolabeling is completely eliminated by treatment with λ-Ptase.

Purification Method: Prepared from pooled rabbit serum by affinity purification via sequential chromatography on phospho and non-phosphopeptide affinity columns.

Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.



Western blot of rat striatal lysate showing specific immunolabeling of the ~32 kDa DARPP-32 phosphorylated at Thr⁷⁵ in the first lane (-). Phosphospecificity is shown in the second lane (+) where immunolabeling is completely eliminated by blot treatment with *lambda* phosphatase (λ-Ptase, 1200 units for 30 min).

Product Specific References:

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Niculescu, M., Perrine, S.A., Miller, J.S., Ehrlich, M.E. and Unterwald, E.M., 2008. Trk: a neuromodulator of age-specific behavioral and neurochemical responses to cocaine in mice. *Journal of Neuroscience*, 28(5), pp.1198-1207.

General References:

Bibb JA, Snyder GL, Nishi A, Yan Z, Meijer L, Fienberg AA, Tsai LH, Kwon YT, Girault JA, Czernik AJ, Haganir RL, Hemmings HC, Jr., Nairn AC, Greengard P (1999) Phosphorylation of DARPP-32 by cdk5 modulates dopamine signalling in neurons. *Nature (London)* 402:669-671.

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Lindskog M, Svenningsson P, Pozzi L, Kim Y, Fienberg AA, Bibb JA, Fredholm BB, Nairn AC, Greengard P, Fisone G (2002) Involvement of DARPP-32 phosphorylation in the stimulant action of caffeine. *Nature (London)* 418:774-778.

Maldve RE, Zhang TA, Ferrani-Kile K, Schreiber SS, Lippmann MJ, Snyder GL, Fienberg AA, Leslie SW, Gonzales RA, Morrisett RA (2002) DARPP-32 and the regulation of the ethanol sensitivity of NMDA receptors in the nucleus accumbens. *Nature Neurosci* 5:641-648.

Svenningsson P, Tzavara ET, Witkin JM, Fienberg AA, Nomikos GG, Greengard P (2002) Involvement of striatal and extrastriatal DARPP-32 in biochemical and behavioral effects of fluoxetine (Prozac®). *Proc Natl Acad Sci USA* 99:3182-3187.