



**PhosphoSolutions®**  
Antibodies that work™

Colorado Biosciences Park  
12635 East Montview Boulevard, #213  
Aurora, CO 80045-7337  
Tel: (888) 442-7100

## Anti-Phospho-Thr<sup>75</sup> DARPP-32

**Catalog Number:** p1025-75

**Size:** 100 µl

**Product Description:** Affinity purified rabbit polyclonal antibody

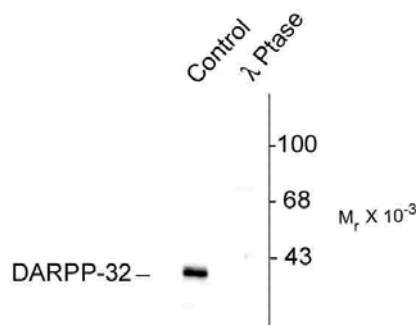
**Applications:** **WB:** 1:1000

**Antigen:** Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr<sup>75</sup> of rat DARPP-32.

**Species reactivity:** The antibody has been directly tested for reactivity in Western blots with rat tissue. It is anticipated that the antibody will also react with bovine, canine, chicken, human, mouse, and non-human primates based on the fact that these species have 100% homology with the amino acid sequence used as antigen.

**Biological Significance:** DARPP-32 is a dopamine (DA) and cAMP-regulated ~32k phosphoprotein that is associated with dopaminergic neurons (Fienberg et al., 1998). The protein inhibits protein phosphatase I when it is phosphorylated on Thr<sup>34</sup>. In contrast, when DARPP-32 is phosphorylated on Thr<sup>75</sup> 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® (Malvde et al., 2002; Lindskog et al., 2002; Svenningsson et al., 2002).

### Anti-Phospho Thr<sup>75</sup> DARPP-32



**Western blot** of rat caudate lysate showing specific immunolabeling of the ~32k DARPP-32 phosphorylated at Thr<sup>75</sup> (Control). The phosphospecificity of this labeling is shown in the second lane (*lambda*-phosphatase: λ-Ptase). The blot is identical to the control except that it was incubated in λ-Ptase (1200 units for 30 min) before being exposed to the Anti-Thr<sup>75</sup> DARPP-32. The immunolabeling is completely eliminated by treatment with λ-Ptase.

Page 1 of 2

**WB** = Western Blot    **IF** = Immunofluorescence    **IHC** = Immunohistochemistry    **IP** = Immunoprecipitation

**Packaging:** 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.

**Storage and Stability.** For long term storage -20°C is recommended. Stable at -20°C for at least 1 year.

**Shipment:** Domestic - Blue Ice; International - Blue Ice or Dry Ice.

**Purification Method:** Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

**Antibody Specificity:** Specific for the ~32k DARPP-32 protein phosphorylated at Thr<sup>75</sup>. Immunolabeling is blocked by  $\lambda$ -phosphatase treatment.

**Quality Control Tests:** Western blots performed on each lot.

**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.
- Fienberg, A.A., Hiroi, N., Mermelstein, P.G., Song, W., Snyder, G.L., Nishi, A., Cheramy, A. O'Callaghan, J.P., Miller, D.B., Cole, D.G., Corbett, R., Haile, C.N., Cooper, D.C., Onn, S.P., Grace, A.A., Ouimet, C.C., White, F.G., Hyman, S.E., Surmeier, D.G., Girault, J., Nestler, E.J. and Greengard, P. (1998) DARPP-32: regulator of the efficacy of dopaminergic neurotransmission. *Science* 281:838-842.
- 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, Feinberg 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.
- Michelle Niculescu, Shane A. Perrine, Jonathan S. Miller, Michelle E. Ehrlich, and Ellen M. Unterwald (2008) Trk: A Neuromodulator of Age-Specific Behavioral and Neurochemical Responses to Cocaine in Mice. *J. Neurosci.*, Jan 2008; 28: 1198 - 1207.

**WB** = Western Blot   **IF** = Immunofluorescence   **IHC** = Immunohistochemistry   **IP** = Immunoprecipitation

**Packaging:** 100  $\mu$ l in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g BSA per ml and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.

**Storage and Stability.** For long term storage  $-20^{\circ}\text{C}$  is recommended. Stable at  $-20^{\circ}\text{C}$  for at least 1 year.

**Shipment:** Domestic - Blue Ice; International – Blue Ice or Dry Ice.