

Anti-Phospho-Ser⁴⁰ Tyrosine Hydroxylase

CATALOG NO.: XPS-1033

FORM: Affinity Purified

BACKGROUND:

Tyrosine Hydroxylase (TH) is the rate-limiting enzyme in the synthesis of the catecholamines Dopamine and Norepinephrine. TH antibodies can therefore be used as markers for dopaminergic and noradrenergic neurons. We raised this polyclonal antibody against a peptide representing the sequence around Ser⁴⁰ in rat TH. This antibody is suitable for most immunochemical applications in a variety of mammalian and some non-mammalian species.

SOURCE:

Rabbit anti-TH (Ser40) polyclonal antibody was raised against a synthetic phosphopeptide corresponding to amino acids residues surrounding the phospho-Ser⁴⁰ of rat tyrosine hydroxylase (TH). Rabbit anti-TH (Ser40) was purified by sequential chromatography on phospho- and non-phosphopeptide affinity columns.

APPLICATION:

This polyclonal antibody is specific for the 60k rat TH phosphorylated at Ser⁴⁰ in lysates of PC-12 Cells stimulated by Okadaic Acid (1 μ M for 60 minutes). Some higher molecular weight bands may be detected depending upon the brain region being studied, protein loads, and the detection methods used. See cited reference. Applications include Immunofluorescence (IF), Immunohistochemistry (IHC) and Western Blots (WB). Human, porcine, quail, mouse, and non-human primate have 100% amino acid sequence identity with the antigen used to raise the antibody. When internally tested under ideal conditions the working dilutions were 1:1000 for IF, IHC and WB.

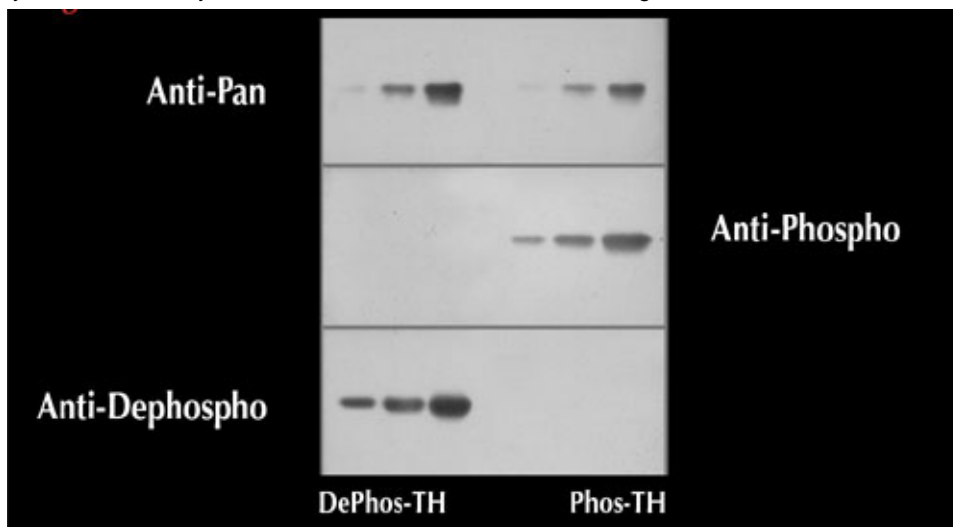


Figure: Western Blots of phospho- and dephospho-proteins to demonstrate the selectivity of the Phospho-Specific Antibody. The Pan-Specific Antibody recognized both the dephospho-Tyrosine Hydroxylase (dephospho-TH) and the phospho-Tyrosine Hydroxylase (phospho-TH). Most importantly, the Phospho-Specific Antibody recognized

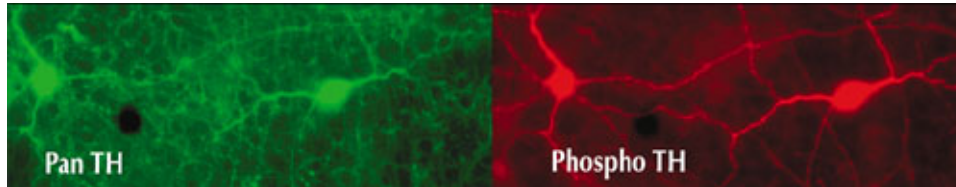


Figure: Immunohistochemical staining of retina with the Pan-Tyrosine Hydroxylase (Pan-TH) and Phospho-Specific Tyrosine Hydroxylase (Phospho-TH) Antibodies. The Pan-TH Antibody shows extensive labeling in this photomicrograph of the retina. In contrast, the Phospho-TH Antibody selectively labels only the two amacrine cells in this light-stimulated retina example. **This product is for research use only.**

STORAGE:

It is supplied as affinity purified polyclonal antibody, 100 μ l in 150 mM NaCl, 10 mM HEPES, 100 μ g per ml BSA and 50% glycerol, pH 7.5., and there is adequate amount of material to conduct 10-mini Western Blots. For long term storage -80°C is recommended, but shorter term storage at -20°C is also acceptable as aliquots may be taken without freeze/thawing due to the presence of 50% glycerol. Stock solutions are stable for a minimum of 1 year at -20°C .

REFERENCES:

1. Witkovsky, P., Gabriel, R., Haycock, J. W., and Meller, E., "Influence of light and neural circuitry on tyrosine hydroxylase phosphorylation in the rat retina," *J. Chem. Neuroanat.*, **19** (2000) 105 - 116.
2. Haycock, J. W., Lew, J. Y., Garcia-Espana, A., Lee, K. Y., Harada, K., Meller, E., and Goldstein, M., "Role of serine-19 phosphorylation in regulating tyrosine hydroxylase studied with site- and phosphospecific antibodies and site-directed mutagenesis," *J. Neurochem.*, **71** (1998) 1670 - 1675.
3. Xu, Z.-Q., Lew, J. Y., Harada, K., Aman, K., Goldstein, M., Deutch, A., Haycock, J. W., and Hokfelt, T., "Immunohistochemical studies on phosphorylation of tyrosine hydroxylase in central catecholamine neurons using site- and phosphorylation state-specific antibodies," *Neuroscience*, **82** (1998) 727 - 738.