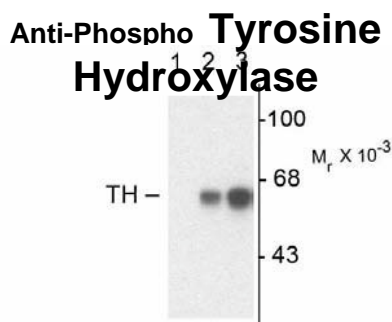


Pel-Freez[®]**Product Specifications****Anti-Phospho-Tyrosine Hydroxylase****Size:** 100 µl**Product Description:** Affinity purified rabbit polyclonal antibody**Applications:** **WB:** 1:1000 **IF, IHC** (frozen sections; Witkovsky et al., 2000):
1:1000**Antigen:** Phosphopeptide corresponding to amino acid residues surrounding the of rat tyrosine hydroxylase.**Species reactivity:** The antibody has been directly tested for reactivity in rat and a variety of other mammalian tissues.**Biological Significance:** 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 in a variety of applications including depression, schizophrenia, Parkinson's disease and drug abuse (Kish et al., 2001; Zhu et al., 2000; Zhu et al., 1999). TH antibodies can also be used to explore basic mechanisms of dopamine and norepinephrine signaling (Witkovsky et al., 2000; Salvatore et al., 2001; Dunkley et al., 2004). The activity of TH is also regulated by phosphorylation (Haycock et al., 1982; Haycock et al., 1992; Jedynak et al., 2002). Phospho-specific antibodies for the phosphorylation sites on TH can be used to great effect in studying this regulation and in identifying the cells in which TH phosphorylation occurs.

Western blot of non-phospho-recombinant tyrosine hydroxylase (Lane 1), PC-12 cell lysate (Lane 2), and PC-12 cell lysate stimulated with KCl, 30 mM for 10 min (Lane 3) showing specific immunolabeling of the ~60k tyrosine hydroxylase phosphorylated at .

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

Antibody Specificity: Specific for the ~60k tyrosine hydroxylase protein phosphorylated at .

Quality Control Tests: Western blots performed on each lot.

References:

- Dunkley PR, Bobrovskaya L, Graham ME, Von Nagy-Felsobuki EI, Dickson PW (2004) Tyrosine hydroxylase phosphorylation: regulation and consequences. *J Neurochem* 91:1025-1043.
- Haycock JW, Ahn NG, Cobb MH, Krebs EG (1992) ERK1 and ERK2, two microtubule-associated protein 2 kinases, mediate the phosphorylation of tyrosine hydroxylase at serine-31 *in situ*. *Proc Natl Acad Sci (USA)* 89:23652369.
- Haycock JW, Bennett WF, George RJ, Waymire JC (1982) Multiple site phosphorylation of tyrosine hydroxylase. Differential regulation *in situ* by a 8-bromo-cAMP and acetylcholine. *J Biol Chem* 257:13699-13703.
- Jedynak JP, Ali SF, Haycock JW, Hope BT (2002) Acute administration of cocaine regulates the phosphorylation of serine-19,-31 and-40 in tyrosine hydroxylase. *J Neurochem* 82:382-388.
- Kish SJ, Kalasinsky KS, Derkach P, Schmunk GA, Guttman M, Ang L, Adams V, Furukawa Y, Haycock JW (2001) Striatal dopaminergic and serotonergic markers in human heroin users. *Neuropsychopharmacology* 24:561-567.
- Salvatore MF, Waymire JC, Haycock JW (2001) Depolarization-stimulated catecholamine biosynthesis: involvement of protein kinases and tyrosine hydroxylase phosphorylation sites *in situ*. *J Neurochem* 79:349-360.
- Witkovsky P, Gabriel R, Haycock JW, Meller E (2000) Influence of light and neural circuitry on tyrosine hydroxylase phosphorylation in the rat retina. *J Chem Neuroanat* 19:105-116.
- Zhu MY, Klimek V, Haycock JW, Ordway GA (2000) Quantitation of tyrosine hydroxylase protein in the locus coeruleus from postmortem human brain. *J Neurosci Meth* 99:37-44.
- Zhu MY, Klimek V, Dilley GE, Haycock JW, Stockmeier C, Overholser JC, Meltzer HY, Ordway GA (1999) Elevated levels of tyrosine hydroxylase in the locus coeruleus in major depression. *Biol Psychiatry* 46:1275-1286.

WB = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation **Packaging:** 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per ml BSA and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots. **Storage and Stability.** For long term storage – is recommended. Stable at – for at least 1 year. **Shipment:** Domestic - Blue Ice; International – Blue Ice or Dry Ice.