

AP05193PU-N**Polyclonal Antibody to Tryptophan Hydroxylase pSer58 - Aff - Purified**

Quantity:	10 Blots
Concentration:	Lot specific
Background:	Tryptophan hydroxylase (TPH) catalyzes the 5-hydroxylation of tryptophan, which is the first step in the biosynthesis of indoleamines (serotonin and melatonin). In mammals, serotonin biosynthesis occurs predominantly in neurons which originate in the raphe nuclei of the brain, and melatonin synthesis takes place within the pineal gland. Although TPH catalyzes the same reaction within the raphe nuclei and the pineal gland, TPH activity is ratelimiting for serotonin but not melatonin biosynthesis. Serotonin functions mainly as a neurotransmitter, whereas melatonin is the principal hormone secreted by the pineal gland. The activity of TPH is enhanced by phosphorylation by cAMP-dependent protein kinase (PKA) and Ca ²⁺ /calmodulin kinase II (CAM K II). Both PKA and CAM K II phosphorylate Ser58 which lies within the regulatory domain of TPH.
Host / Isotype:	Rabbit / IgG
Immunogen:	Synthetic phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser58 of tryptophan hydroxylase.
Format:	State: Liquid purified Ig Buffer System: HEPES (pH 7.5) solution containing 150 mM NaCl, 100 µg per ml BSA and 50% glycerol
Applications:	Western Blot: 1:1000. Dot Blot: 1:1000. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	This antibody reacts to Tryptophan Hydroxylase (pSer58). Species: Human, Mouse, Rat, Xenopus. Other species not tested.
Storage:	Ship on dry ice. Store (in aliquots) at -20°C to -70°C. Avoid repeated freezing and thawing. Shelf life: one year from despatch.
General Readings:	1. Banik U, Wang GA, Wagner PD, Kaufman S. Interaction of phosphorylated tryptophan hydroxylase with 14-3-3 proteins. J Biol Chem. 1997 Oct 17;272(42):26219-25. PubMed PMID: 9334190. 2. Jiang GC, Yohrling GJ, Schmitt JD, Vrana KE, Yohrling GJ, Schmitt IV. Identification of substrate orienting and phosphorylation sites within tryptophan hydroxylase using homology-based molecular modeling. J Mol Biol. 2000 Sep 29;302(4):1005-17. PubMed PMID: 10993738. 3. Johansen PA, Jennings I, Cotton RG, Kuhn DM. Phosphorylation and activation of tryptophan hydroxylase by exogenous protein kinase A. J Neurochem. 1996 Feb;66(2):817-23. PubMed PMID: 8592157.

4. Johansen PA, Jennings I, Cotton RG, Kuhn DM. Tryptophan hydroxylase is phosphorylated by protein kinase A. *J Neurochem.* 1995 Aug;65(2):882-8. PubMed PMID: 7616249.
5. Kuhn DM, Arthur R, States JC. Phosphorylation and activation of brain tryptophan hydroxylase: identification of serine-58 as a substrate site for protein kinase A. *J Neurochem.* 1997 May;68(5):2220-3. PubMed PMID: 9109552.
6. Kumer SC, Mockus SM, Rucker PJ, Vrana KE. Amino-terminal analysis of tryptophan hydroxylase: protein kinase phosphorylation occurs at serine-58. *J Neurochem.* 1997 Oct;69(4):1738-45. PubMed PMID: 9326303.
7. Martínez A, Knappskog PM, Haavik J. A structural approach into human tryptophan hydroxylase and its implications for the regulation of serotonin biosynthesis. *Curr Med Chem.* 2001 Jul;8(9):1077-91. PubMed PMID: 11472242.

Pictures:

Western blot using Ser58 tryptophan hydroxylase antibody on recombinant rabbit tryptophan hydroxylase in a crude bacterial lysate incubated in the absence and presence of cAMP dependent protein kinase (PKA).

