Anti-Phospho-Ser^{58} Tryptophan Hydroxylase 1

Catalog Number: p1575-58  Size: 100 µl

Product Description: Affinity purified rabbit polyclonal antibody

Applications: WB: 1:1000

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser^{58} of tryptophan Hydroxylase 1 (TPH1).

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

Biological Significance: Tryptophan hydroxylase (TPH) catalyzes the 5-hydroxylation of tryptophan, which is the first step in the biosynthesis of indoleamines (serotonin and melatonin) (Martinez et al., 2001). 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 rate-limiting 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) (Jiang et al., 2000; Johansen et al., 1996) Both PKA and CaM K II phosphorylate Ser^{58} which lies within the regulatory domain of TPH (Kuhn et al., 1997).

Western blot of recombinant tryptophan hydroxylase incubated in the absence (Control) and presence of cAMP-dependent protein kinase (PKA) showing specific immunolabeling of the ~53k tryptophan hydroxylase protein phosphorylated at Ser^{58}.
**Purification Method:** Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

**Antibody Specificity:** Specific for the ~53k tryptophan hydroxylase protein phosphorylated at Ser58.

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

**References:**

