

Anti-Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody

Product Data Sheet · P/N 74115 Rev 01 · Reissued 2026-09-19 (layout only)

Product code	Pack size
P40033-100	100 µL
Host Species	Rabbit (Polyclonal)
Mr (kDa)	53

Description

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 Ca²⁺/calmodulin kinase II (CaM K II) (Jiang et al., 2000; Johansen et al., 1996). Both PKA and CaM K II phosphorylate Ser58 which lies within the regulatory domain of TPH (Kuhn et al., 1997).

Immunogen

Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser58 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.

Physical State

Liquid; Buffer contents: 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per mL BSA and 50% glycerol

Purification Method

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

Recommended Antibody Dilutions

WB: 1:1000

Storage/Stability

Stable at -20 °C for at least 1 year.

For long term storage -20 °C is recommended

Shipping Conditions

Domestic: Blue Ice

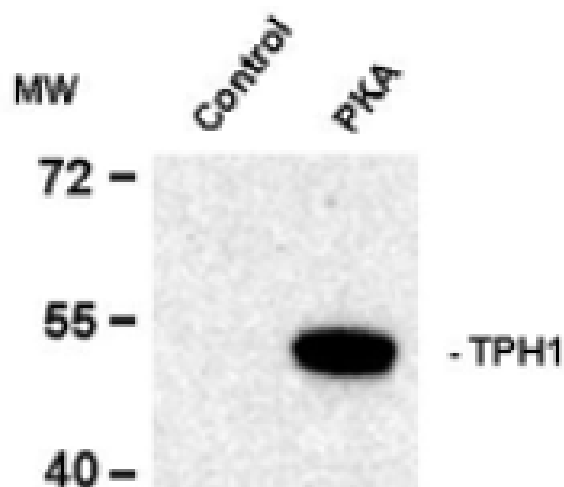
International: Blue Ice or Dry Ice

References

- 1) Jiang GC et al. (2000) J Mol Biol 302:1005-1017.
- 2) Johansen PA et al. (1996) J Neurochem 66:817-823.

3) Kuhn, DM et al. (1997) J Neurochem 68:2220-2223.

4) Martinez A et al. (2001) Curr Med Chem 8:1077-1091.



Western Blot 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 Ser58.

For research use or further manufacturing only. Not for use in diagnostic procedures, or for human or animal consumption.