

**Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody**  
**Affinity purified rabbit polyclonal antibody**  
**Catalog # AN1029**

**Specification**

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**Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">P09810</a>
Reactivity	Rabbit
Predicted	Bovine, Chicken, Human, Mouse, Monkey, Rat, Xenopus, Zebrafish
Host	Rabbit
Clonality	polyclonal
Calculated MW	55 KDa

**Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody - Additional Information**

Gene ID	24848
Gene Name	TPH1
<b>Other Names</b>	
Tryptophan 5-hydroxylase 1, Tryptophan 5-monooxygenase 1, Tph1, Tph	

**Target/Specificity**

Synthetic phospho-peptide corresponding to amino acid residues surrounding Ser58 conjugated to KLH.

**Dilution**

WB~~ 1:1000

**Format**

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.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Shipping**

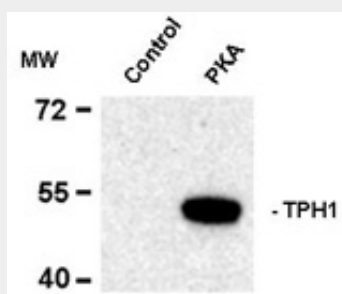
Blue Ice

**Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody - Images



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 Ser58.

### Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody - Background

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<sup>2+</sup>/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).

### Phospho-Ser58 Tryptophan Hydroxylase 1 Antibody - References

- Jiang GC, Yohrling GJ, Schmitt JD, Vrana KE (2000) Identification of substrate orienting and phosphorylation sites within tryptophan hydroxylase using homology-based molecular modeling. *J Mol Biol* 302:1005-1017.
- Johansen PA, Jennings I, Cotton RG, Kuhn DM (1996) Phosphorylation and activation of tryptophan hydroxylase by exogenous protein kinase A. *J Neurochem* 66:817-823.
- Kuhn, DM, Arthur, Jr, R, States, JC (1997) Phosphorylation and activation of brain tryptophan hydroxylase: identification of serine-58 as a substrate site for protein kinase A. *J Neurochem* 68:2220-2223.
- Martinez A, Knappskog PM, Haavik J (2001) Structural approach into human tryptophan hydroxylase and its implications for the regulation of serotonin biosynthesis. *Curr Med Chem* 8:1077-1091.