

Phospho-Ser19 Tryptophan Hydroxylase 2 Antibody
Affinity purified rabbit polyclonal antibody
Catalog # AN1134

Specification

Phospho-Ser19 Tryptophan Hydroxylase 2 Antibody - Product Information

Application	WB
Primary Accession	O8CGU9
Reactivity Predicted	Rat Bovine, Mouse, Zebrafish
Host	Rabbit
Clonality	polyclonal
Calculated MW	55 KDa

Phospho-Ser19 Tryptophan Hydroxylase 2 Antibody - Additional Information

Gene ID	317675
Gene Name	TPH2

Other Names

Tryptophan 5-hydroxylase 2, Neuronal tryptophan hydroxylase, Tryptophan 5-monooxygenase 2, Tph2, Ntph

Target/Specificity

Synthetic phospho-peptide corresponding to amino acid residues surrounding Ser19 conjugated to KLH.

Dilution

WB~~ 1:1000

Format

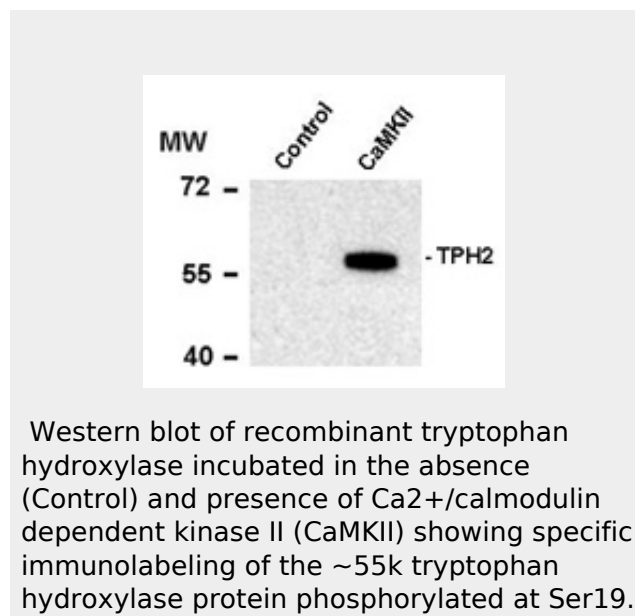
Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity

Specific for the ~55k tryptophan hydroxylase protein phosphorylated at Ser19.

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.



Phospho-Ser19 Tryptophan Hydroxylase 2 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 Ca²⁺/calmodulin kinase II (CaM K II) (Jiang et al., 2000; Johansen et al., 1996). CaM K II phosphorylates Ser19 which lies within the regulatory domain of TPH2 (McKinney et al., 2005).

Phospho-Ser19 Tryptophan Hydroxylase 2

Precautions

Phospho-Ser19 Tryptophan Hydroxylase 2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Shipping

Blue Ice

Phospho-Ser19 Tryptophan Hydroxylase 2 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](#)

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.

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.

McKinney J, Knappskog PM, Haavik J (2005) Different properties of the central and peripheral forms of human tryptophan hydroxylase. *J Neurochem* 92(2):311-20.

Kuhn DM, Sakowski SA, Geddes TJ, Wilkerson C, Haycock JW (2007) Phosphorylation and activation of tryptophan hydroxylase 2: identification of serine-19 as the substrate site for calcium, calmodulin-dependent protein kinase II. *J Neurochem* 103(4):1567-73.