

DESCRIPTION

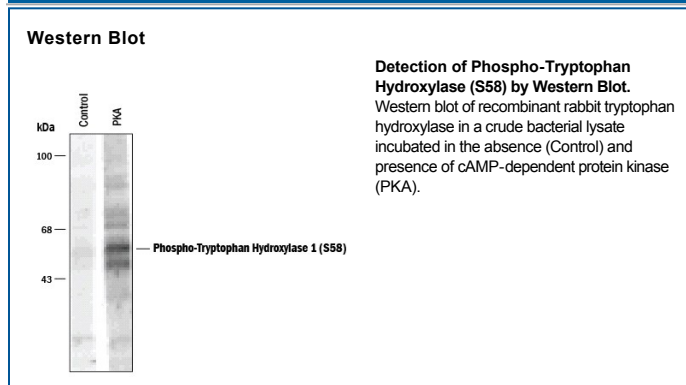
Species Reactivity	Human/Mouse/Rat/Bovine/Canine/Chicken/Primate/Rabbit/ <i>Xenopus</i> /Zebrafish
Specificity	This antibody is specific for the ~55 kDa TPH phosphorylated at S58 in Western blots.
Source	Polyclonal Rabbit IgG
Purification	Antigen Affinity-purified
Immunogen	Phosphopeptide corresponding to amino acid residues surrounding the phospho-S58 of Tryptophan Hydroxylase 1/TPH-1
Formulation	100 µL in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg/mL BSA and 50% glycerol. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	1:1000 dilution	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	For long-term storage, ≤-20° C is recommended. Product is stable at ≤ -20° C for at least 1 year.

BACKGROUND

Tryptophan hydroxylase (TPH) is a 51 kDa, 444 amino acid (aa) enzyme that belongs to the pterin-dependent, aromatic amino-acid hydroxylase family. It is found in peripheral tissues and pineal tissues, and catalyzes the rate-limiting step in serotonin generation from L-tryptophan. The molecule contains two domains, an N-terminal regulatory domain (aa 1-110) and a C-terminal catalytic domain (aa 111-444) that contains an iron atom. TPH is constitutively active but unstable. Phosphorylation by PKA at S58 stabilizes the enzyme and increases its activity by 25%. This action is complemented by 14-3-3 proteins that physically interact with phosphorylated TPH to increase both its stability and activity by another 15% to 45% of baseline. Binding of the acidic carboxyterminus of 14-3-3 with the regulatory region of TPH also blocks phosphatase activity directed towards TPH, prolonging its activity. One splice variant of TPH is known. It occurs at the extreme C-terminus where there is a 29 aa substitution for the last seven amino acids. This may generate a more stable enzyme.

References:

1. Boularand, S. *et al.* (1990) *Nucleic Acids Res.* **18**:4257.
2. Wang, G-A. *et al.* (1998) *J. Neurochem.* **71**:1769.
3. Kumer, S.C. *et al.* (1997) *J. Neurochem.* **69**:1738.
4. Wang, L. *et al.* (2002) *Biochemistry* **41**:12569.
5. Banik, U. *et al.* (1997) *J. Biol. Chem.* **272**:26219.