

DESCRIPTION

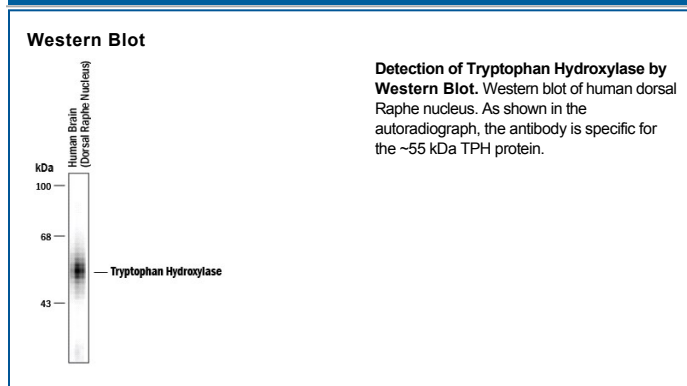
Specificity	This antibody is specific for the ~55 kDa TPH in Western blots of human dorsal Raphe nucleus lysates. Immunolabeling has been demonstrated in rat brain lysates. Based upon the relatively high degree of homology of tryptophan hydroxylase, the antibodies should cross-react with other mammalian species. Due to antigen modifications in <i>E. coli</i> , this antibody does not recognize TPH in rabbit tissues.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Tryptophan Hydroxylase
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
Immunohistochemistry	1:1000 dilution	No Sample Info

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:

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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.
6. Haycock, J.W. *et al.* (2002) J. Neurosci. Methods. **114**:205.