

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Tryptophan Hydroxylase 1/TPH-1 in direct ELISAs and Western blots.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human Tryptophan Hydroxylase 1/TPH-1 Met102-Pro403 Accession # P17752
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

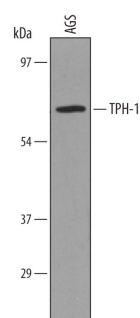
APPLICATIONS

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 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below

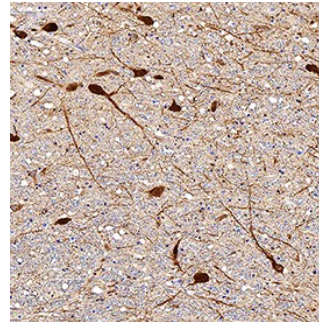
DATA

Western Blot



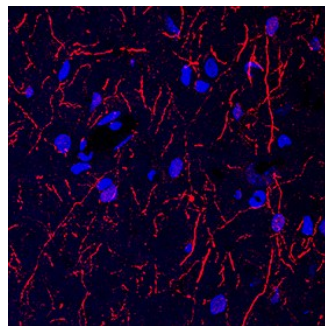
Detection of Human Tryptophan Hydroxylase 1/TPH-1 by Western Blot. Western blot shows lysates of AGS human gastric adenocarcinoma cell line. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human Tryptophan Hydroxylase 1/TPH-1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5276) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Tryptophan Hydroxylase 1 at approximately 60 kDa (as indicated). This experiment was conducted under reducing conditions and using *Immunoblot Buffer Group 8*.

Immunohistochemistry



Tryptophan Hydroxylase 1/TPH-1 in Human Brain. Tryptophan Hydroxylase 1/TPH-1 was detected in immersion fixed paraffin-embedded sections of human brain (substantia nigra) using Goat Anti-Human Tryptophan Hydroxylase 1/TPH-1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5276) at 1 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to neurons. View our protocol for *IHC Staining with VisUCyte HRP Polymer Detection Reagents*.

Immunohistochemistry



Tryptophan Hydroxylase 1/TPH-1 in Rat Brain. Tryptophan Hydroxylase 1/TPH-1 was detected in perfusion fixed frozen sections of rat brain using Goat Anti-Human Tryptophan Hydroxylase 1/TPH-1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5276) at 1.7 µg/mL overnight at 4 °C. Tissue was stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to neurons. View our protocol for *Fluorescent IHC Staining of Frozen Tissue Sections*.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Tryptophan Hydroxylase 1 (TPH-1) is a 50-60 kDa intracellular enzyme that belongs to the biopterin-dependent, aromatic amino acid hydroxylase family. It is expressed in gut enterochromaffin cells and pineal gland. TPH-1 catalyzes the hydroxylation of L-Trp, which is the rate-limiting step in serotonin biosynthesis. Human TPH-1 is 444 amino acids (aa) in length. It contains an N-terminal regulatory domain (aa 1-98), a catalytic region (aa 99-424), and a C-terminal Leu-zipper tetramerization domain (aa 425-444). TPH-1 is phosphorylated on Ser58, and subsequently binds to 14-3-3 proteins, resulting in activation. It functions as a noncovalent Fe-binding 230 kDa homotetramer. There are three potential splice variants. One shows a 29 aa substitution for aa 438-444, a second shows a 50 aa substitution for aa 157-444, and a third shows a 68 aa substitution for aa 1-21. Over aa 102-403, Human TPH-1 shares 95% aa identical with mouse TPH-1.