

## DESCRIPTION

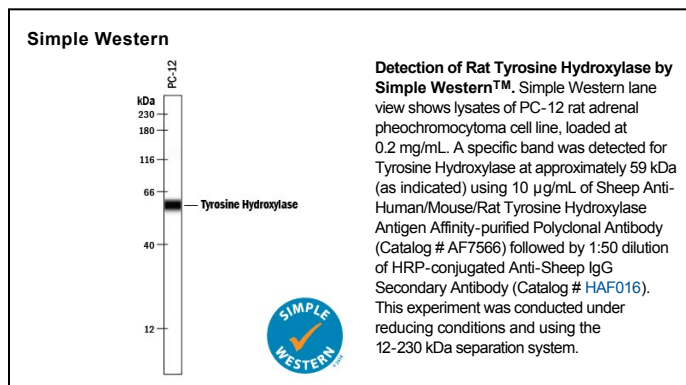
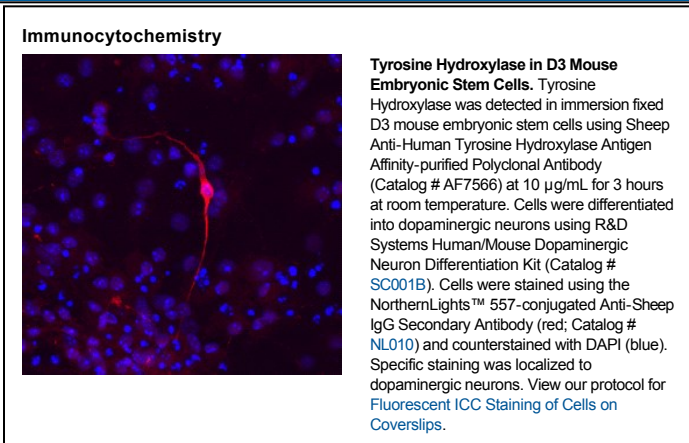
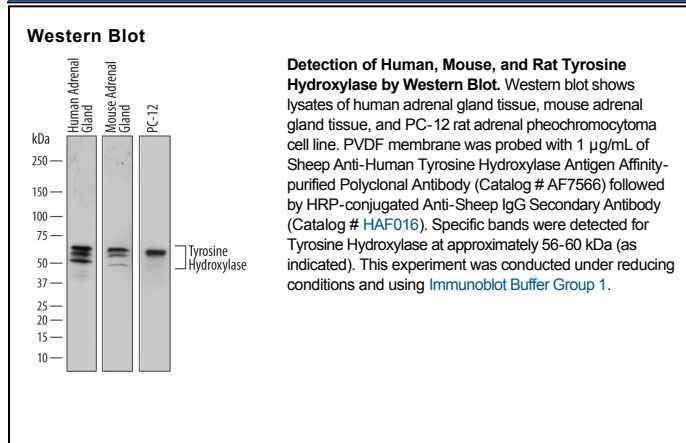
<b>Species Reactivity</b>	Human/Mouse/Rat
<b>Specificity</b>	Detects human, mouse and rat Tyrosine Hydroxylase in Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human TPH1 is observed.
<b>Source</b>	Polyclonal Sheep IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human Tyrosine Hydroxylase Ala278-Tyr401, predicted Accession # P07101
<b>Formulation</b>	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
<b>Western Blot</b>	1 µg/mL	See Below
<b>Immunocytochemistry</b>	5-15 µg/mL	See Below
<b>Simple Western</b>	10 µg/mL	See Below

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Sterile PBS to a final concentration of 0.2 mg/mL.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

TH (Tyrosine 3-hydroxylase; also tyrosine 3-monoxygenase) is a 60-62 kDa member of the biopterin-dependent aromatic amino acid hydroxylase family of molecules. It is expressed by neurons of the dopamine and autonomic nervous system, plus the neuroendocrine cells of the adrenal medulla. TH is considered the rate limiting enzyme for catecholamine synthesis, and serves to catalyze the hydroxylation of L-tyrosine. It maintains stores of catecholamines following secretion, and its activity is regulated by targeted site phosphorylation. Human TH is 528 amino acids (aa) in length. It contains an N-terminal ACT domain (aa 69-190) that binds small molecules and regulates enzyme activity, and a C-terminal enzymatic region (aa 196-493). There are three significant utilized phosphorylation sites. Two at Ser31 and Ser40 increase enzyme activity, while phosphorylation at Ser19 promotes subsequent Ser40 phosphorylation. TH functions as a 240 kDa noncovalent homotetramer. There are four potential splice variants. One shows a deletion of aa 31-34, a second shows a deletion of aa 31-61, while a third contains a Met substitution for aa 1-34. A fourth isoform variant shows a deletion of aa 35-61. Over aa 278-401, human TH shares 94% aa sequence identity with mouse TH, a molecule that most closely resembles the fourth human isoform variant described above.