

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human Tyrosine Hydroxylase in direct ELISAs and human, mouse and rat Tyrosine Hydroxylase in Western blots. In direct ELISAs, no cross-reactivity with recombinant human Tryptophan Hydroxylase-1 is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 779427
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human Tyrosine Hydroxylase Ala278-Tyr401 Accession # P07101
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

TH (Tyrosine 3-hydroxylase), also known as Tyrosine 3-monooxygenase, is a 60-62 kDa member of the bipterin-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.

PRODUCT SPECIFIC NOTICES

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