Rabbit antibody to Tyrosine Hydroxylase (TH): affinity purified

Catalogue No.:	R-148-50
Description:	Tyrosine hydroxylase (TH) is the rate-limiting enzyme in the synthesis of the catecholamines dopamine, epinephrine and norepinephrine. Therefore the regulation of the TH enzyme represents the central means for controlling the synthesis of these important catecholamines. FUNCTION: Plays an important role in the physiology of adrenergic neurons. CATALYTIC ACTIVITY: L-tyrosine + tetrahydrobiopterin + O2 = 3,4-dihydroxy-L-phenylalanine + 4a-hydroxytetrahydrobiopterin. COFACTOR: Fe(2+) ion. ENZYME REGULATION: Phosphorylation leads to an increase in the catalytic activity. PATHWAY: Catecholamine biosynthesis; first step. SUBUNIT: Homotetramer. PTM: In vitro, phosphorylation of Ser-19 increases the rate of Ser-40 phosphorylation, which results in enzyme opening and activation. SIMILARITY: Belongs to the biopterin-dependent aromatic amino acid hydroxylase family. The presence of different DNA sequences at the TH locus confers susceptibility to various disorders of the brain including manic-depression and schizophrenia. Parkinson's disease is also considered a TH deficiency as low dopamine levels are a consistent neurochemical abnormality.
Related products:	R-118-100, Anti-TH rabbit antibody, whole serum.
Unit size:	50 ug
Antigen:	A synthetic peptide (PRFIGRRQSLIEDARK) as part of human Tyrosine Hydroxylase (aa 63-78) conjugated to KLH has been used as the immunogen. The peptide is homologous with the corresponding sequence derived from TH protein in rat and mouse (aa 32-47).
Antibody Type:	Rabbit polyclonal
Other Names:	Tyrosine hydroxylase; Tyrosine 3-monooxygenase; L-tyrosine hydroxylase; Tyrosine 3-hydroxylase;
Accession:	P07101 (TY3H_HUMAN); P24529 (TY3H_MOUSE); P04177 (TY3H_RAT)
Produced in:	Rabbit
Purity:	Affinity purified
Applications:	Immunohistochemistry (IHC): 0.5-1 ug/mL. This is a superb antibody for detection of tyrosine hydroxylase containing neurons exhibiting an intense labelling with a negligible background. This antiserum has proven extremely useful for staining of catecholaminergic neurons. It stains nicely and intensely dendritic processes and fine nerve terminals.Western Blotting (WB): 0.5-2 ug/mL. This antibody demonstrates clear immunoreactivity for TH at 60 kDa in rat PC12 cell lysate and mouse brain homogenate.Biosensis recommends optimal dilutions/concentrations should be determined by the end user.
Specificity:	IHC on brain shows a pattern of staining specific for TH containing neurons. WB analysis demonstrates one single band in cell lysate and brain homogenate at the expected molecular weight for TH (~60 kDa).
Cross-reactivity:	This antibody is known to react with human, mouse and rat. Cross reactivity with other species

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has not yet been tested.

Form: Lyophilised

Reconstitution: Reconstitute in 50 uL of sterile water. Centrifuge to remove any insoluble material.

Storage: Store lyophilized antibody at 2-8C. After reconstitution keep aliquots at -20C for a higher stability, and at 2-8C with an appropriate antibacterial agent. Glycerol (1:1) may be added for an additional stability. Avoid repetitive freeze/thaw cycles.

General References:

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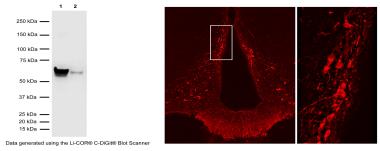

Left: Western Blot analysis of tyrosine hydroxylase (TH) expression in PC12 cell lysate (Lane 1: 6 ug) and mouse brain (Lane 2: 40 ug). The anti-TH rabbit antibody (1 ug/mL) detects one specific band at ~60 kDa corresponding to the expected molecular weight of TH in both samples. Method: SDS Page: denaturing and reducing, 4-12% Bis-Tris gel; Transfer: Tris-Glycine (Towbin's buffer) with 20% methanol; Membrane: PVDF (0.45 um); Blocking: 5% skim milk in TBST, 1 hr at RT; Primary antibody: R-148-50 (1 ug/mL), overnight at 2-8C; Secondary antibody: donkey anti-rabbit (1:25,000), 1 hr at RT; Detection: Chemiluminescence. Right: Detection of TH-immunoreactivity in tuberoinfundibular dopaminergic neurons in rat hypothalamic arcuate nucleus by Immunohistochemistry. Primary antibody: rabbit anti-TH cat# R-148-50 (1:2,000); Secondary antibody: Cy3-conjugated anti-rabbit. Photo courtesy of Dr. Erik Hrabovszky, Hungarian Academy of Sciences, Budapest, Hungary.

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