Rabbit antibody to Tyrosine Hydroxylase (TH): whole serum

Catalogue No.:	R-118-100
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-148-50, Affinity-purified anti-TH rabbit antibody.
Batch No.:	See product label
Unit size:	100 uL
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).
Other Names:	TH; 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:	Whole serum
Applications:	Immunohistochemistry (IHC): 1:2,000 to 1:5,000, dilutions of up to 1:100,000 have been reported. This is a superb antibody for detection of tyrosine hydroxylase (TH) 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. We recommend mouse or rat brain containing catecholaminergic neurons as a positive control for this antibody, for example brain stem or striatum. Western blotting (WB): 1:100 to 1:500. Antibody has been tested on RIPA-extracted PC12 cell lysate and shown to be specific for TH (~60 kDa). Tissue homogenates show a higher level of non-specific binding and presence of uncharacterized bands. Affinity-purified anti-TH antibody R-148-50 is recommended for tissue homogenates. Biosensis recommends optimal dilutions/concentrations should be determined by the end user.

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Specificity: IHC on brain shows a pattern of staining specific for TH containing neurons.

Cross-reactivity: This antibody is known to react with rat, mouse and guinea pig. Cross reactivity with other species has not yet been tested.

Form: Lyophilised

Reconstitution: Reconstitute in 100 uL of sterile water. Centrifuge to remove any insoluble material.

Storage: Keep 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.

Specific References:

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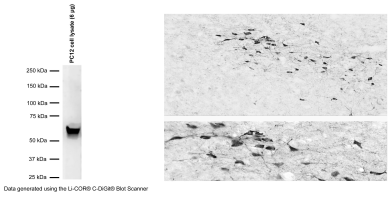

Left: Western Blot analysis of tyrosine hydroxylase (TH) expression in PC12 cell lysate (6 ug protein/lane). The anti-TH rabbit antibody (1:300) detects one specific band at ~60 kDa corresponding to the expected molecular weight of TH. Method: SDS Page: denaturing and reducing, 4-12% Bis-Tris gel; Transfer: 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-118-100 (1:300), overnight at 2-8C; Secondary antibody: donkey anti-rabbit (1:25,000), 1 hr at RT; Detection: Chemiluminescence. Right: Detection of TH-immunoreactivity in dopaminergic neurons in the rat zona incerta in formalin-fixed floated cryostat section by Immunohistochemistry. TH was visualized with the rabbit polyclonal antiserum (R-118-100; 1:100,000) using the biotinylated secondary antibody-ABC method and nickel-diaminobenzidine chromogen. Photo courtesy of Dr. Erik Hrabovszky, Hungarian Academy of Sciences, Budapest, Hungary.

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