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phospho-TH (Ser31) Rabbit pAb

Catalog # AP96745

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P04177
Other Accession	P04177
Reactivity	Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	55966
Physical State	Liquid
Immunogen	KLH conjugated synthesised phosphopeptide derived from rat TH around the phosphorylation site of Ser31
Epitope Specificity	VT(p-S)PR
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the biopterin-dependent aromatic amino acid hydroxylase family.
SUBUNIT	Homotetramer.
Post-translational modifications	In vitro, phosphorylation of Ser-19 increases the rate of Ser-40 phosphorylation, which results in enzyme opening and activation.
DISEASE	Defects in TH are the cause of Segawa syndrome autosomal recessive (ARSEGS) [MIM:605407]. A form of DOPA-responsive dystonia presenting in infancy or early childhood. Dystonia is defined by the presence of sustained involuntary muscle contractions, often leading to abnormal postures. Some cases present with parkinsonian symptoms in infancy. Unlike all other forms of dystonia, it is an eminently treatable condition, due to a favorable response to L-DOPA. Note=May play a role in the pathogenesis of Parkinson disease (PD). A genome-wide copy number variation analysis has identified a 34 kilobase deletion over the TH gene in a PD patient but not in any controls.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	bs-0016P is one synthetic peptide derived from human TH. The protein encoded by this gene is involved in the conversion of tyrosine to dopamine. It is the rate-limiting enzyme in the synthesis of catecholamines, hence plays a key role in the physiology of adrenergic neurons. Mutations in this gene have been associated with autosomal recessive Segawa syndrome. Alternatively spliced transcript variants encoding different isoforms have been noted for this gene. [provided by RefSeq, Jul 2008]

Additional Information

Gene ID	25085
Other Names	DYT14; DYT5b; TYH; The; TY3H_HUMAN; TH; Tyrosine 3-hydroxylase (TH); 1.14.16.2; TY3H_MOUSE; TY3H_RAT; tyrosine hydroxylase; tyrosine

	3-monooxygenase; TH | Tyrosine Hydroxylase (phospho-S31); p-Tyrosine Hydroxylase; phospho-Tyrosine Hydroxylase; p-TH; TH | Tyrosine Hydroxylase (phospho-Ser31)
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	Th
Function	Catalyzes the conversion of L-tyrosine to L- dihydroxyphenylalanine (L-Dopa), the rate-limiting step in the biosynthesis of catecholamines, dopamine, noradrenaline, and adrenaline. Uses tetrahydrobiopterin and molecular oxygen to convert tyrosine to L-Dopa (By similarity). In addition to tyrosine, is able to catalyze the hydroxylation of phenylalanine and tryptophan but with lower specificity (PubMed:10933781, PubMed:11922614). Positively regulates the regression of retinal hyaloid vessels during postnatal development (By similarity).
Cellular Location	Cytoplasm, perinuclear region {ECO:0000250|UniProtKB:P24529}. Nucleus. Cell projection, axon {ECO:0000250|UniProtKB:P24529}. Cytoplasm. Cytoplasmic vesicle, secretory vesicle, synaptic vesicle. Note=When phosphorylated at Ser-19 shows a nuclear distribution and when phosphorylated at Ser-31 as well as at Ser-40 shows a cytosolic distribution (PubMed:21392500, PubMed:32778969). Expressed in dopaminergic axons and axon terminals (By similarity). {ECO:0000250|UniProtKB:P07101, ECO:0000269|PubMed:21392500}

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.