Recombinant Human Tyrosine Hydroxylase, His-tagged

Cat. No. TH-1916H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	A DNA sequence encoding the human TH isoform 2 (P07101-3) (Pro 2-Gly 497) was fused with a polyhistidine tag at the N-terminus.
Species	Human
Source	Human
ProteinLength	2-497 a.a.
Description	TH, or TyrH is the rate-limiting enzyme of catecholamine biosynthesis. TH uses tetrahydrobiopterin and molecular oxygen to convert tyrosine to DOPA. Its amino terminal 150 amino acids comprise a domain whose structure is involved in regulating the enzyme"s activity. The TH enzyme is inhibited in feedback fashion by the catecholamine neurotransmitters. Dopamine binds to TH competitively with tetrahydrobiopterin, and interacts with the R domain. Activity of tyrosine hydroxylase is regulated by feedback inhibition and inactivation by catecholamines, and activation by protein phosphorylation. TH is modified in the presence of NO, resulting in nitration of tyrosine residues and the glutathionylation of cysteine residues. TH involved in the pathogenesis of PD at several different levels, in addition to being a promising candidate for developing new treatments of this disease.
Form	Lyophilized from sterile PBS, pH 7.4. Normally 5% - 8% trehalose and mannitol are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA.

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Purity	> 94% as determined by SDS-PAGE.
Stability	Samples are stable for up to twelve months from date of receipt at -70°C.
Predicted N terminal	Met
Molecular Mass	The recombinant human TH consists of 515 amino acids and has a calculated molecular mass of 57.6 KDa. It migrates as an approximately 75 KDa band in SDS-PAGE under reducing conditions.
Reconstitution	A hardcopy of COA with reconstitution instruction is sent along with the products. Please refer to it for detailed information.
Storage	Store it under sterile conditions at -70°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage. Avoid repeated freeze-thaw cycles.

GENE INFORMATION

Gene Name	TH tyrosine hydroxylase [Homo sapiens]
Official Symbol	TH
Synonyms	TH; tyrosine hydroxylase; TYH; DYT14; DYT5b; tyrosine 3-monooxygenase; Tyrosine 3-monooxygenase; dystonia 14; OTTHUMP00000011163; OTTHUMP00000011225; OTTHUMP00000011226; tyrosine 3-hydroxylase; EC 1.14.16.2
Gene ID	7054
mRNA Refseq	NM_000360
Protein Refseq	NP_000351

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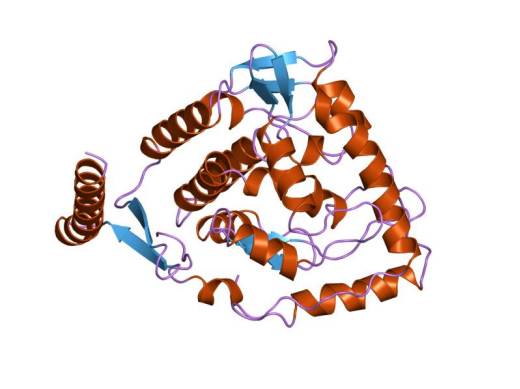
MIM	191290
UniProt ID	P07101
Chromosome Location	11p15.5
Pathway	ATF-2 transcription factor network; Alpha-synuclein signaling; Biogenic Amine Synthesis; Catecholamine biosynthesis; Dopaminergic synapse; Metabolic pathways; Metabolism; Nicotine Activity on Dopaminergic Neurons; Parkinson"s disease; Tyrosine metabolism; catecholamine biosynthesis; p38 signaling mediated by MAPKAP kinases
Function	amino acid binding; dopamine binding; ferric iron binding; ferrous iron binding; iron ion binding; metal ion binding; oxygen binding; protein binding; tetrahydrobiopterin binding; tyrosine 3-monooxygenase activity
	

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