Tyrosine Hydroxylase Protein, Human (sf9, His)

Cat. No.:	HY-P73564
Synonyms:	DYT14; TH; TYH dystonia 14; TYH; Tyrosine 3-monooxygenase
Species:	Human
Source:	Sf9 insect cells
Accession:	P07101-3 (P2-G497)
Gene ID:	7054
Molecular Weight:	Approximately 57.6 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM Tris, 500 mM NaCl, pH 8.0, 10% Glycerol. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Tyrosine Hydroxylase, a pivotal enzyme in the biosynthesis of catecholamines, facilitates the conversion of L-tyrosine to L-dihydroxyphenylalanine (L-Dopa), representing the rate-limiting step in the synthesis of neurotransmitters such as dopamine, noradrenaline, and adrenaline. Utilizing tetrahydrobiopterin and molecular oxygen, the enzyme orchestrates the hydroxylation of tyrosine to form L-Dopa, a critical precursor in catecholamine biosynthesis. While tyrosine is its primary substrate, the enzyme exhibits a broader substrate range, catalyzing the hydroxylation of phenylalanine and tryptophan with lower specificity. Moreover, Tyrosine Hydroxylase contributes to the positive regulation of the regression of retinal hyaloid vessels during postnatal development. Despite its central role in catecholamine synthesis, it is worth noting that the discussed instance of Tyrosine Hydroxylase lacks catalytic activity.

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