

DOPA Decarboxylase/DDC Protein, Human, Recombinant (His)

General Information

Synonyms:	dopa decarboxylase (aromatic L-amino acid decarboxylase);AADC
Protein Construction:	A DNA sequence encoding the full length of human DDC (NP_000781.1) (Met 1-Glu 480) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q53Y41
Molecular Weight:	55 kDa (predicted); 48 kDa protein (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to convert the substrate 3, 4-dihydroxy L-phenylalanine (L-Dopa) to 3, 4-dihydroxyphenylethylamine (dopamine). The dopamine product is measured by its absorbance at 340 nm after derivatization with trinitrobenzene sulfonic acid. The specific activity is >1000 pmoles/min/μg.
Purity:	≥ 90 % as determined by SDS-PAGE. ≥ 85 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 50 mM Tris, 100 mM NaCl, pH 8, 10% glycerol.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Dopa Decarboxylase (DDC), also known as AADC and Aromatic-L-amino acid decarboxylase, is a 54 kDa member of the group II decarboxylase family of proteins. It is a vitamin B6-dependent homodimeric enzyme that catalyzes the decarboxylation of both L-3,4-dihydroxyphenylalanine (L-DOPA) and L-5-hydroxytryptophan to dopamine and serotonin, respectively, which are major mammalian neurotransmitters and hormones belonging to catecholamines and indoleamines. Since L-DOPA is regularly used to treat the symptoms of Parkinson's disease, the catalytic pathway is of particular research interest. Defects of DDC are associated with severe developmental

delay, oculogyric crises (OGC), as well as autosomal recessive disorder AADC deficiency, an early onset inborn error in neurotransmitter metabolism which can lead to catecholamine and serotonin deficiency.

Reference

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