

Tryptophan Hydroxylase 1/TPH-1 Protein, Human, Recombinant (His)

General Information

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| Synonyms: | TPRH;tryptophan hydroxylase 1;TRPH |
| Protein Construction: | A DNA sequence encoding the human TPH1 (P17752-1) (Ile 2-Ile 444) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met |
| Species: | Human |
| Expression Host: | E. coli |
| Accession: | P17752-1 |
| Molecular Weight: | 52.7 kDa (predicted); 48 kDa (reducing conditions) |

QC Testing

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| Biological Activity: | Measured by its ability to catalyze Trp hydroxylation to 5-HTP (Routinely tested). |
| Purity: | > 95 % as determined by SDS-PAGE |
| Endotoxin: | Please contact us for more information. |
| Formulation: | Lyophilized from a solution filtered through a 0.22 µm filter, containing 20 mM Tris, 200 mM NaCl, 10% glycerol, pH 8.0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization. |

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 recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Tryptophan 5-hydroxylase 1, also known as Tryptophan 5-monoxygenase 1, Tryptophan hydroxylase 1, TPH1, TPH and TPRH, is an enzyme that belongs to the bipterin-dependent aromatic amino acid hydroxylase family. TPH1 contains one ACT domain. Tryptophan hydroxylase catalyzes the bipterin-dependent monooxygenation of tryptophan to 5-hydroxytryptophan (5HT), which is subsequently decarboxylated to form the neurotransmitter serotonin. It is the rate-limiting enzyme in the biosynthesis of serotonin. It is the rate-limiting enzyme in the

biosynthesis of serotonin. TPH1 expression is limited to a few specialized tissues: raphe neurons, pinealocytes, mast cells, mononuclear leukocytes, beta-cells of the islets of Langerhans, and intestinal and pancreatic enterochromaffin cells. The tryptophan hydroxylase 1 (TPH1) gene is also reported to be associated with suicidal behavior. Polymorphisms of TPH1 may assist in identifying a subgroup of mood disorder patients that is at higher risk for suicidal behavior.

Reference

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