Recombinant TPH1 protein (His tag)

Catalog Number	546804
Synonyms	Tryptophan 5-monooxygenase 1
Species	Human
Expression System	E. coli
Accession	P17752
Molecular Weight	Predictes a molecular mass of 52.64 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 55 kDa band.

Product Information

Sequence Region	1-444
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>90%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 1-444 aa (P17752) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Tryptophan 5-hydroxylase 1 (TPH1) fragment (residues 1-444) is a high-purity protein designed for studying the rate-limiting step of serotonin biosynthesis. This fragment fully encompasses the functional ACT domain, making it an ideal tool for investigating domain-specific mechanisms in neurotransmitter regulation. Tryptophan 5-hydroxylase 1 (TPH1) catalyzes the oxidation of L-tryptophan to 5-hydroxy-L-tryptophan, representing the rate-determining step in serotonin biosynthesis. As the initial and crucial enzymatic reaction in serotonin production, TPH1 plays a fundamental role in regulating serotonin levels, which are essential for various physiological processes including mood regulation, gastrointestinal function, and sleep-wake cycles. The enzyme's activity is critical for maintaining proper neurotransmitter balance in serotonergic systems.