# PRODUCT INFORMATION

## FPPS Short Isoform (human, recombinant)

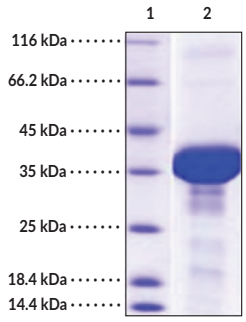
*Item No. 43695*

### Overview and Properties

| | |
|---|---|
| **Synonyms:** | Dimethylallyltranstransferase, Farnesyl Diphosphate Synthase, (2E,6E)-Farnesyl Diphosphate Synthase, Farnesyl Pyrophosphate Synthase, FPP Synthase |
| **Source:** | Recombinant human N-terminal His-tagged FPPS short isoform expressed in *E. coli* |
| **Amino Acids:** | 67-435 |
| **Uniprot No.:** | P14324 |
| **Molecular Weight:** | 42.4 kDa |
| **Storage:** | -80°C (as supplied) |
| **Stability:** | ≥1 year |
| **Purity:** | ≥85% estimated by SDS-PAGE |
| **Supplied in:** | Lyophilized from sterile PBS, pH 7.4 |
| **Protein Concentration:** | ***batch specific*** mg/ml |

*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Image




**Lane 1:** MW Markers
**Lane 2:** FPPS

**SDS-PAGE Analysis of FPPS.** This protein has a calculated molecular weight of 42.4 kDa.



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## Description

Farnesyl diphosphate synthase (FPPS) is a prenyltransferase and a member of the farnesyl pyrophosphate/geranylgeranyl pyrophosphate (FPP/GPP) synthase family.[1] It is composed of a single helical domain with a large central pocket that contains the active site.[2] FPPS functions as a homodimer and catalyzes the sequential condensation of dimethylallyl pyrophosphate (DMAPP) to C15 farnesyl pyrophosphate, which is necessary for the biosynthesis of isoprenoids, sterols, and prenylated proteins.[1,3] A shorter isoform of FPPS lacks the N-terminal mitochondrial targeting peptide and localizes to the cytoplasm and, to a lesser extent, in lysosomes.[1] Increased levels of mRNA encoding FPPS in the frontal cortex are associated with higher levels of phosphorylated tau and earlier disease onset in patients with Alzheimer's disease.[4] Cayman's FPPS Short Isoform (human, recombinant) protein consists of 368 amino acids and has a calculated molecular weight of 42.4 kDa.

## References


1. Dhar, M.K., Koul, A., and Kaul, S. Farnesyl pyrophosphate synthase: A key enzyme in isoprenoid biosynthetic pathway and potential molecular target for drug development. *N. Biotechnol.* **30(2)**, 114-123 (2013).
2. Kavanagh, K.L., Guo, K., Dunford, J.E., *et al*. The molecular mechanism of nitrogen-containing bisphosphonates as antiosteoporosis drugs. *Proc. Natl. Acad. Sci. U S A* **103(20)**, 7829-7834 (2006).
3. McGuigan, C., Habib, N.A., Wasan, H.S., *et al*. A phosphoramidate ProTide (NUC-1031) and acquired and intrinsic resistance to gemcitabine. *J. Clin. Oncol.* **29(15_suppl)**, e13540 (2016).
4. Pelleieux, S., Picard, C., Lamarre-Théroux, L., *et al*. Isoprenoids and tau pathology in sporadic Alzheimer's disease. *Neurobiol. Aging* **65**, (2018).



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