Data Sheet (Cat.No.TMPY-02654)

TargetMol

FDPS Protein, Human, Recombinant (His)

General Information

Synonyms:	FPS;FPPS;Farnesyl pyrophosphate synthase
Protein Construction:	A DNA sequence encoding the human FDPS isoform b (NP_001129294.1) (Met 1-Lys 353) was expressed, with a polyhistide tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P14324-2
Molecular Weight:	42.4 kDa (predicted); 38 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85 % 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 PBS, pH 7.5. 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

Z-farnesyl diphosphate synthase (FDPS) is an enzyme belonging to the family of transferases, specifically those transferring aryl or alkyl groups other than methyl groups. Z-farnesyl diphosphate synthase (FDPS) functions as key enzyme in isoprenoid biosynthesis which catalyzes the formation of farnesyl diphosphate, a precurcor for several classes of essential metabolites. FDPS catalyzes the production of geranyl pyrophosphate and farnesyl pyrophosphate from isopentenyl pyrophosphate and dimethylallyl pyrophosphate. The resulting product, farnesyl

pyrophosphate, is a key intermediate in cholesterol and sterol biosynthesis, a substrate for protein farnesylation and geranylgeranylation, and a ligand or agonist for certain hormone receptors and growth receptors. Drugs that inhibit this enzyme prevent the post-translational modifications of small GTPases and have been used to treat diseases related to bone resorption. Functions of FDPS may be inactivated by interferon-induced RSAD2. This inactivation may result of disruption of lipid rafts at the plasma membrane, and thus have an antiviral effect since many enveloped viruses need lipid rafts to bud efficiently out of the cell.

Reference

Liu J,et al.(2023) Farnesyl diphosphate synthase exacerbates nonalcoholic steatohepatitis via the activation of AHR-CD36 axis. FASEB J. 37(7):e23035.

Zhang Y,et al.(2009) Lipophilic bisphosphonates as dual farnesyl/geranylgeranyl diphosphate synthase inhibitors: an X-ray and NMR investigation. J Am Chem Soc. 131(14):5153-5162.

Moshage HJ,et al.(2002) Oncoviral bovine leukemia virus G4 and human T-cell leukemia virus type 1 p13(II) accessory proteins interact with farnesyl pyrophosphate synthetase. J Virol. 76(3):1400-1414.

Feng Y,et al.(2019) Chirality-Driven Mode of Binding of α-Aminophosphonic Acid-Based Allosteric Inhibitors of the Human Farnesyl Pyrophosphate Synthase (hFPPS). J Med Chem. 62(21):9691-9702.