10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

FDPS Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2418b

Product Information

Application	IHC-P, WB, E
Primary Accession	P14324
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	48275
Antigen Region	389-419

Additional Information

Gene ID	2224
Other Names	Farnesyl pyrophosphate synthase, FPP synthase, FPS, (2E, 6E)-farnesyl diphosphate synthase, Dimethylallyltranstransferase, Farnesyl diphosphate synthase, Geranyltranstransferase, FDPS, FPS, KIAA1293
Target/Specificity	This FDPS antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 389-419 amino acids from the center region of human FDPS.
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	FDPS Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FDPS (HGNC:3631)
Synonyms	FPS, KIAA1293
Function	Key enzyme in isoprenoid biosynthesis which catalyzes the formation of farnesyl diphosphate (FPP), a precursor for several classes of essential

metabolites including sterols, dolichols, carotenoids, and ubiquinones. FPP also serves as substrate for protein farnesylation and geranylgeranylation. Catalyzes the sequential condensation of isopentenyl pyrophosphate with the allylic pyrophosphates, dimethylallyl pyrophosphate, and then with the resultant geranylpyrophosphate to the ultimate product farnesyl pyrophosphate.

Cellular Location Cytoplasm.

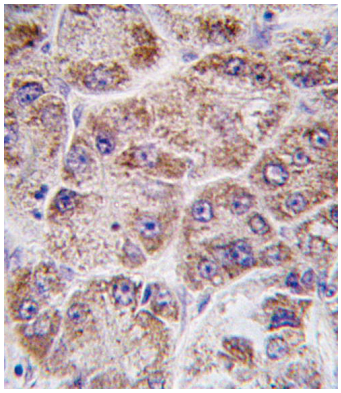
Background

The isoprene biosynthetic pathway supply the cell with cholesterol, ubiquinone, and various nonsterol metabolites. The farnesylpyrophosphate synthetase enzyme catalyzes the formation of geranyl and farnesylpyrophosphate from isopentenylpyrophosphate and dimethylallyl pyrophosphate. Analysis of FDPS activity and protein in rat liver, accompanied by immunofluorescence and immunoelectron microscopy studies, demonstrated that FDPS is predominantly localized in peroxisomes.1 Liver tissue from patients with the peroxisomal deficiency diseases Zellweger syndrome and neonatal adrenoleukodystrophy exhibit diminished activities of FDPS and subsequent isoprenoid synthesis.

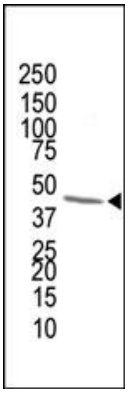
References

Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).
Nomura, N., et al., DNA Res. 1(1):27-35 (1994).
Wilkin, D.J., et al., J. Biol. Chem. 265(8):4607-4614 (1990).
Sheares, B.T., et al., Biochemistry 28(20):8129-8135 (1989).

Images



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with FDPS antibody (Center)(Cat.#AP2418b), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



The anti-FDPS Pab (Cat. #AP2418b) is used in Western blot to detect FDPS in human cytokeratin liver cell lysate. Data is kindly provided by Dr. Masaru Harada from Stanford University (Palo Alto, CA).

Citations

- Liposome encapsulated zoledronate favours M1-like behaviour in murine macrophages cultured with soluble factors from breast cancer cells.
- Altered expression of farnesyl pyrophosphate synthase in prostate cancer: evidence for a role of the mevalonate pathway in disease progression?
- 5-Aza-2\'-deoxycytidine induced growth inhibition of leukemia cells through modulating endogenous cholesterol biosynthesis.
- Sterol-regulatory-element-binding protein 2 and nuclear factor Y control human farnesyl diphosphate synthase expression and affect cell proliferation in hepatoblastoma cells.
- Mevalonate pathway intermediates downregulate zoledronic acid-induced isopentenyl pyrophosphate and ATP analog formation in human breast cancer cells.
- Reduced expression of the mevalonate pathway enzyme farnesyl pyrophosphate synthase unveils recognition of tumor cells by Vgamma9Vdelta2 T cells.