abcam

ab277132

Anti-FDPS/FPS antibody [005] - BSA and Azide free

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human FDPS aa 1-400. The exact immunogen used to generate this antibody is proprietary information. Database link P14324
Carrier free	Yes
Clone number	005
Purification technique	Affinity purification Protein A

Reactivity data

ICC

Tested

Species	Human
Dilution info	1/20 - 1/100
Notes	-

IP

Tested

Species	Human
Dilution info	1-4 µg/mg of lysate
Notes	-

WB

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/25 - 1/100
Notes	-

Target data

See full target information FDPS

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.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	+4°C

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Farnesyl diphosphate synthase (FDPS) also known as farnesyl pyrophosphate synthase (FPS) is an important enzyme that catalyzes the synthesis of farnesyl diphosphate (FPP) from isopentenyl pyrophosphate (IPP) and dimethylallyl pyrophosphate (DMAPP). This enzyme plays an important role in the mevalonate pathway which is essential for the biosynthesis of sterols including cholesterol and other isoprenoids. FDPS is a protein with a molecular mass of approximately 42 kDa. Its expression occurs in various tissues with significant levels in liver brain and bone where it contributes to different cellular metabolic processes.
Biological function summary	Farnesyl diphosphate synthase facilitates the production of FPP a common precursor for the synthesis of isoprenoid compounds such as cholesterol ubiquinones and dolichol. FDPS does not form a complex but works in coordination with other enzymes in the mevalonate pathway. Its activity supports numerous cellular functions including membrane assembly protein prenylation and cell signaling. The enzyme's role is important for normal cellular growth and development influencing processes like cell differentiation and proliferation.
Pathways	FDPS plays a significant role in the cholesterol biosynthesis and protein prenylation pathways. These pathways are critical for cellular homeostasis and involve several enzymes including HMG-CoA reductase and squalene synthase. The cholesterol biosynthesis pathway includes multiple steps where FPP serves as a lipid intermediate. Meanwhile in protein prenylation FPP contributes to the post-translational modification of proteins such as small GTPases which impacts cell signaling and cytoskeletal organization.
Associated diseases and disorders	FDPS has a connection to bone diseases such as osteoporosis and also links to cardiovascular disorders. The relationship to osteoporosis arises from its role in bone resorption and osteoclast activity mediated by proteins like RANKL and osteoprotegerin. Cardiovascular disorders may link to altered cholesterol metabolism with FDPS influencing cholesterol biosynthesis and regulation. Inhibition of FDPS activity targets these pathways leading to therapeutic strategies that may address both metabolic and bone health issues.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

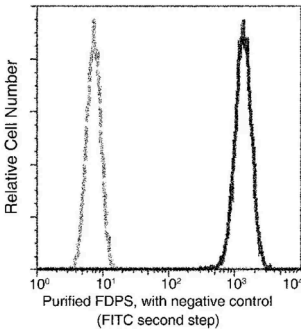
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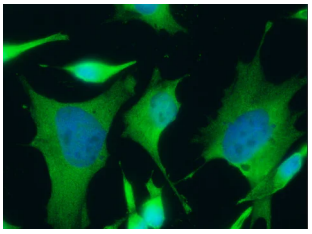
4 product images



Flow Cytometry (Intracellular) - Anti-FDPS/FPS antibody [005] - BSA and Azide free (ab277132)

FDPS/FPS Flow Cytometry (Intracellular) staining using rabbit Anti-FDPS/FPS antibody

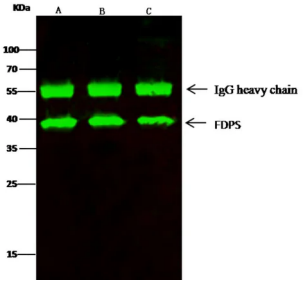
Intracellular flow cytometric analysis of FDPS/FPS expression on HeLa (human epithelial cell line from cervix adenocarcinoma) cells. The cells were stained with ab277132 at 1/25 dilution, then a FITC-conjugated second step antibody. The Fluorescence histograms were derived from gated events with the forward and side light-scatter characteristics of intact cells.



Immunocytochemistry - Anti-FDPS/FPS antibody [005] - BSA and Azide free (ab277132)

FDPS/FPS Immunocytochemistry staining using rabbit Anti-FDPS/FPS antibody

Immunofluorescence staining of FDPS/FPS in HUVEC (human umbilical vein endothelial cell line) cells. Cells were fixed with 4% PFA, permeabilized with 0.3% Triton X-100 in PBS, blocked with 10% serum, and incubated with ab277132 at 1/60 dilution at 37°C for 1 hour. Then cells were stained with an Alexa Fluor® 488-conjugated goat Anti-rabbit IgG secondary antibody (green) and counterstained with DAPI (blue).



Immunoprecipitation - Anti-FDPS/FPS antibody [005] - BSA and Azide free (ab277132)

FDPS/FPS was immunoprecipitated from:
Lane A:0.5 mg Hela (human epithelial cell line from cervix adenocarcinoma) Whole Cell Lysate
Lane B:0.5 mg HepG2 (human liver hepatocellular carcinoma cell line) Whole Cell Lysate
Lane C:0.5 mg A549 (human lung carcinoma cell line) Whole Cell Lysate

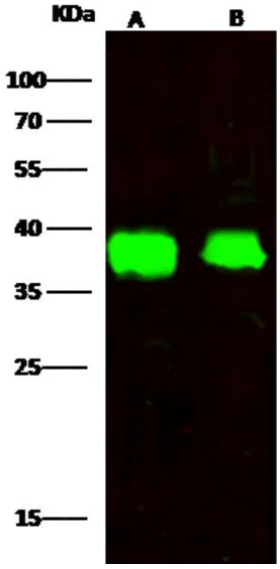
2 µL ab277132 and 15 µl of 50 % Protein G agarose.

Western blot was performed using ab277132, at 1/100 dilution

Secondary antibody: Dylight 800-labeled antibody to rabbit IgG (H+L), at 1/5000 dilution

Performed under reducing conditions.
All lanes:
Immunoprecipitation - Anti-FDPS/FPS antibody [005] - BSA and Azide free (ab277132)

Predicted band size: 48 kDa



Western blot - Anti-FDPS/FPS antibody [005] - BSA and Azide free (ab277132)

FDPS/FPS Western blot staining using rabbit Anti-FDPS/FPS antibody

Performed under reducing conditions.
All lanes:
Western blot - Anti-FDPS/FPS antibody [005] - BSA and Azide free (ab277132) at 1/500 dilution

Lane 1:
HepG2 (human liver hepatocellular carcinoma cell line) whole cell lysate at 30 µg

Lane 2:
HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 30 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG H&L (Dylight800) at 1/10000 dilution

Predicted band size: 48 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.