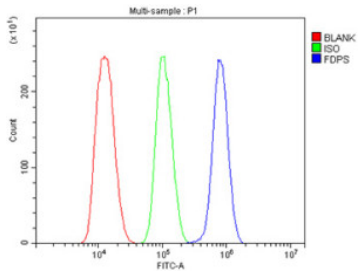
FDPS Antibody / Isoprenoid Biosynthesis Enzyme Antibody (FY13499)

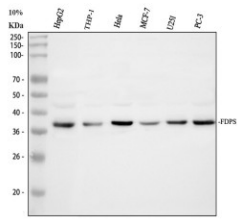
Catalog No.	Formulation	Size
FY13499	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen Affinity
Buffer	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
UniProt	P14324
Applications	Western Blot : 0.5-1ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This FDPS Antibody / Isoprenoid Biosynthesis Enzyme Antibody is available for research use only.



FDPS Antibody Human Monocytic Leukemia Cell FACS. Flow cytometry analysis of fixed and permeabilized human THP-1 cells using FDPS antibody demonstrated a clear rightward shift of the stained cell population (blue) relative to the isotype control (green), indicating specific intracellular detection of FDPS. Cells without primary and secondary antibodies served as the blank control (red), and cells were blocked with normal goat serum prior to staining. This FDPS Antibody, also called an Isoprenoid Biosynthesis Enzyme Antibody, is useful for investigating mevalonate pathway regulation, protein prenylation, cholesterol metabolism, and cancer biology.



FDPS Antibody Human Cancer Cell WB. Western blot testing of human HepG2 (lane 1), THP-1 (lane 2), HeLa (lane 3), MCF-7 (lane 4), U251 (lane 5), and PC-3 (lane 6) lysates using FDPS antibody detected a prominent band at approximately 38 kDa. Although the canonical molecular weight of FDPS is approximately 48 kDa, migration at approximately 38-40 kDa has been reported for the mature enzyme following cleavage of its N-terminal mitochondrial targeting sequence. This FDPS Antibody, also called an Isoprenoid Biosynthesis Enzyme Antibody, is useful for investigating mevalonate pathway regulation, protein prenylation, cholesterol metabolism, and cancer biology.

Description

FDPS Antibody / Isoprenoid Biosynthesis Enzyme Antibody recognizes farnesyl diphosphate synthase (FDPS), a key enzyme in the mevalonate pathway that catalyzes sequential condensation reactions to generate farnesyl diphosphate, an essential intermediate in isoprenoid biosynthesis. Farnesyl diphosphate serves as a precursor for cholesterol, steroid hormones, dolichols, ubiquinone, and numerous nonsterol isoprenoids required for normal cellular function. Because FDPS occupies a critical branch point within the mevalonate pathway, it regulates multiple metabolic processes involved in membrane synthesis, energy metabolism, intracellular signaling, and cell growth.

FDPS is indispensable for protein prenylation, a post-translational modification in which farnesyl or geranylgeranyl groups are attached to signaling proteins including members of the RAS, RHO, RAC, and RAB families of small GTPases. Prenylation enables these proteins to associate with cellular membranes and participate in signal transduction, vesicle trafficking, cytoskeletal organization, and cell proliferation. Through these functions, FDPS contributes to diverse physiological processes including embryonic development, immune function, osteoclast activity, and maintenance of normal tissue homeostasis.

Aberrant activation of the mevalonate pathway and elevated FDPS expression have been associated with numerous cancers, where enhanced isoprenoid production supports tumor growth, invasion, and metastatic progression. FDPS is also the molecular target of nitrogen-containing bisphosphonates, widely used for the treatment of osteoporosis and prevention of skeletal complications associated with metastatic bone disease. Inhibition of FDPS disrupts protein prenylation and osteoclast survival, providing the therapeutic basis for this important drug class. Consequently, FDPS has become an important biomarker and therapeutic target in cancer biology, bone metabolism, and metabolic disease research.

FDPS integrates cholesterol biosynthesis with protein prenylation and cellular signaling by controlling the production of essential isoprenoid intermediates. Ongoing studies continue to define its roles in metabolism, oncogenic signaling, bone biology, and therapeutic responses to mevalonate pathway inhibitors. An FDPS Antibody is a valuable research tool for investigating isoprenoid biosynthesis, mevalonate pathway regulation, protein prenylation, cholesterol metabolism, and cancer biology.

Explore additional research tools for oncology, cell signaling, and therapeutic target discovery on our Cancer Marker Antibodies page.

Application Notes

Optimal dilution of the FDPS Antibody / Isoprenoid Biosynthesis Enzyme Antibody should be determined by the researcher.

Immunogen

E.coli-derived human Farnesyl diphosphate synthase recombinant protein (amino acids S29-Q397) was used as the immunogen for the FDPS Antibody.

Storage

After reconstitution, the FDPS Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

FDPS antibody, Isoprenoid Biosynthesis Enzyme antibody, Farnesyl Diphosphate Synthase antibody, Farnesyl Pyrophosphate Synthase antibody