

FDPS (104J2E): sc-517603

BACKGROUND

FDPS (farnesyl diphosphate synthase), also known as FPS or FPPS, is a 419 amino acid enzyme belonging to the FPP/GGPP synthetase family. Localized to cytoplasm and peroxisome, FDPS expression is regulated by phorbol esters and polyunsaturated fatty acids. FDPS assists in cholesterol biosynthesis, post-translational protein modifications and synthesis of steroid hormones in the isoprenoid pathway. FDPS catalyzes the formation of farnesyl diphosphate (FPP), a precursor for several classes of essential metabolites including sterols, dolichols, carotenoids and ubiquinones. FDPS is inactivated by interferon-induced RSAD2, which may result in the disruption of lipid rafts at the plasma membrane. Existing as a homodimer, FDPS may have anti-viral effects when inactivated by RSAD2. Reduced activity of FDPS in liver may partly be the cause of Zellweger syndrome and neonatal adrenoleukodystrophy, both of which are known to be peroxisomal deficiency diseases.

REFERENCES

- Guidi, C., et al. 2006. The isoprenoid pathway in the ectomycorrhizal fungus *Tuber borchii* Vittad: cloning and characterisation of the *tbhmg*, *tbfp* and *tbsqs* genes. *Curr. Genet.* 50: 393-404.
- Mao, J., et al. 2006. Solid-state NMR, crystallographic, and computational investigation of bisphosphonates and farnesyl diphosphate synthase-bisphosphonate complexes. *J. Am. Chem. Soc.* 128: 14485-14497.
- Leon, A., et al. 2006. Isoprenoid biosynthesis as a drug target: bisphosphonate inhibition of *Escherichia coli* K12 growth and synergistic effects of fosmidomycin. *J. Med. Chem.* 49: 7331-7341.
- Cusson, M., et al. 2006. Characterization and tissue-specific expression of two lepidopteran farnesyl diphosphate synthase homologs: implications for the biosynthesis of ethyl-substituted juvenile hormones. *Proteins* 65: 742-758.
- Levy, M.E., et al. 2007. Farnesyl diphosphate synthase: a novel genotype association with bone mineral density in elderly women. *Maturitas* 57: 247-252.
- Marini, F., et al. 2008. Modulatory effect of farnesyl pyrophosphate synthase (FDPS) rs2297480 polymorphism on the response to long-term amino-bisphosphonate treatment in postmenopausal osteoporosis. *Curr. Med. Res. Opin.* 24: 2609-2615.
- Ory, B., et al. 2008. Farnesyl diphosphate synthase is involved in the resistance to zoledronic acid of osteosarcoma cells. *J. Cell. Mol. Med.* 12: 928-941.
- Romanelli, M.G., et al. 2009. Characterization and functional analysis of *cis*-acting elements of the human farnesyl diphosphate synthetase (FDPS) gene 5' flanking region. *Genomics* 93: 227-234.
- Li, J., et al. 2009. Reduced expression of the mevalonate pathway enzyme farnesyl pyrophosphate synthase unveils recognition of tumor cells by Vγ9Vδ2 T cells. *J. Immunol.* 182: 8118-8124.

CHROMOSOMAL LOCATION

Genetic locus: FDPS (human) mapping to 1q22; Fdps (mouse) mapping to 3 F1.

SOURCE

FDPS (104J2E) is a mouse monoclonal antibody raised against recombinant FDPS of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

FDPS (104J2E) is recommended for detection of FDPS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for FDPS siRNA (h): sc-75011, FDPS siRNA (m): sc-75012, FDPS shRNA Plasmid (h): sc-75011-SH, FDPS shRNA Plasmid (m): sc-75012-SH, FDPS shRNA (h) Lentiviral Particles: sc-75011-V and FDPS shRNA (m) Lentiviral Particles: sc-75012-V.

Molecular Weight of FDPS: 48 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.