

Fatty Acid Synthase (G-11): sc-48357

BACKGROUND

Fatty acid biosynthesis is mediated by seven catalytic enzymes and an acyl carrier protein (ACP), to which various acyl intermediates are covalently attached. Fatty Acid Synthase (FAS) is the anabolic enzyme that contains the seven unique catalytic sites and mediates the conversion of acetyl-CoA and malonyl-CoA, in the presence of the cofactor NADPH, into long-chain saturated fatty acids, such as palmitate. Human Fatty Acid Synthase cDNA encodes a 2,504 amino acid protein. Catalytically active Fatty Acid Synthase is a homodimer. Human Fatty Acid Synthase mRNA is variably expressed with abundant levels present in brain, lung and liver. Fatty acid synthetic metabolism is abnormally elevated in tumor cells and may support cell growth or survival of malignant cancers.

CHROMOSOMAL LOCATION

Genetic locus: FASN (human) mapping to 17q25.3; Fasn (mouse) mapping to 11 E2.

SOURCE

Fatty Acid Synthase (G-11) is a mouse monoclonal antibody raised against amino acids 2205-2504 of Fatty Acid Synthase of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Fatty Acid Synthase (G-11) is available conjugated to agarose (sc-48357 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-48357 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-48357 PE), fluorescein (sc-48357 FITC), Alexa Fluor® 488 (sc-48357 AF488), Alexa Fluor® 546 (sc-48357 AF546), Alexa Fluor® 594 (sc-48357 AF594) or Alexa Fluor® 647 (sc-48357 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-48357 AF680) or Alexa Fluor® 790 (sc-48357 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Fatty Acid Synthase (G-11) is recommended for detection of Fatty Acid Synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:1000, dilution range 1:1000-1:5000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Fatty Acid Synthase siRNA (h): sc-43758, Fatty Acid Synthase siRNA (m): sc-41516, Fatty Acid Synthase shRNA Plasmid (h): sc-43758-SH, Fatty Acid Synthase shRNA Plasmid (m): sc-41516-SH, Fatty Acid Synthase shRNA (h) Lentiviral Particles: sc-43758-V and Fatty Acid Synthase shRNA (m) Lentiviral Particles: sc-41516-V.

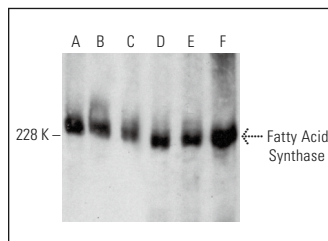
Molecular Weight of Fatty Acid Synthase: 270 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or 3T3-L1 cell lysate: sc-2243.

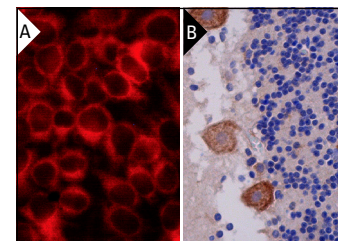
STORAGE

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

DATA



Fatty Acid Synthase (G-11) HRP: sc-48357 HRP. Direct western blot analysis of Fatty Acid Synthase expression in HeLa (A), 3T3-L1 (B), Hep G2 (C), A549 (D) and PC-3 (E) whole cell lysates and mouse liver tissue extract (F).



Fatty Acid Synthase (G-11): sc-48357. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic and membrane staining of Purkinje cells (B).

SELECT PRODUCT CITATIONS

- Moreau, A., et al. 2009. A novel pregnane X receptor and S14-mediated lipogenic pathway in human hepatocyte. *Hepatology* 49: 2068-2079.
- Cui, Y., et al. 2017. NADPH accumulation is responsible for apoptosis in breast cancer cells induced by Fatty Acid Synthase inhibition. *Oncotarget* 8: 32576-32585.
- Huang, L., et al. 2018. Inhibition of protein arginine methyltransferase 5 enhances hepatic mitochondrial biogenesis. *J. Biol. Chem.* 293: 10884-10894.
- Kumari, R., et al. 2019. Caspase-10 inhibits ATP-citrate lyase-mediated metabolic and epigenetic reprogramming to suppress tumorigenesis. *Nat. Commun.* 10: 4255.
- Zou, Y., et al. 2020. Illuminating NAD⁺ metabolism in live cells and *in vivo* using a genetically encoded fluorescent sensor. *Dev. Cell* 53: 240-252.e7.
- Yan, Y., et al. 2021. Sulforaphane downregulated Fatty Acid Synthase and inhibited microtubule-mediated mitophagy leading to apoptosis. *Cell Death Dis.* 12: 917.
- Jung, Y.H., et al. 2022. Silencing SIRT5 induces the senescence of UCB-MSCs exposed to TNF- α by reduction of fatty acid β -oxidation and anti-oxidation. *Free Radic. Biol. Med.* 192: 1-12.
- Pauli, J.R., et al. 2023. Exercise training restores weight gain and attenuates hepatic inflammation in a rat model of non-celiac gluten sensitivity. *J. Cell. Biochem.* 124: 520-532.

RESEARCH USE

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

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