

Fatty Acid Synthase (A-5): sc-55580

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 (A-5) is a mouse monoclonal antibody raised against amino acids 2205-2504 mapping at the C-terminus 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 (A-5) is available conjugated to either Alexa Fluor[®] 546 (sc-55580 AF546) or Alexa Fluor[®] 594 (sc-55580 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-55580 AF680) or Alexa Fluor[®] 790 (sc-55580 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Fatty Acid Synthase (A-5) is recommended for detection of Fatty Acid Synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:10000), 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.

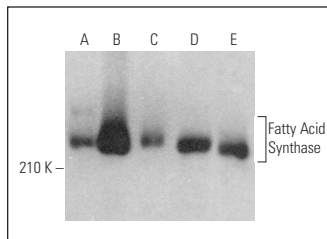
Molecular Weight of Fatty Acid Synthase: 270 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, SK-BR-3 cell lysate: sc-2218 or A549 cell lysate: sc-2413.

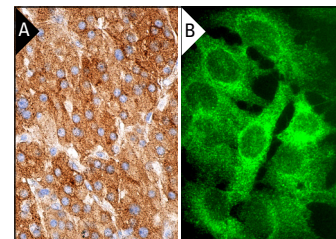
STORAGE

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 (A-5): sc-55580. Western blot analysis of Fatty Acid Synthase expression in AT3B-1 (A), SK-BR-3 (B), Hep G2 (C), A549 (D) and 3T3-L1 (E) whole cell lysates.



Fatty Acid Synthase (A-5): sc-55580. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic and membrane staining of glandular cells (A). Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

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- Paudyal, A., et al. 2010. The novel mouse mutant, chuzhoi, has disruption of Ptk7 protein and exhibits defects in neural tube, heart and lung development and abnormal planar cell polarity in the ear. *BMC Dev. Biol.* 10: 87.
- Santolla, M.F., et al. 2012. G protein-coupled estrogen receptor mediates the up-regulation of Fatty Acid Synthase induced by 17β-Estradiol in cancer cells and cancer-associated fibroblasts. *J. Biol. Chem.* 287: 43234-43245.
- Tsui, K.H., et al. 2013. Hypoxia upregulates the gene expression of mitochondrial aconitase in prostate carcinoma cells. *J. Mol. Endocrinol.* 51: 131-141.
- Bose, S.K., et al. 2014. Forkhead box transcription factor regulation and lipid accumulation by hepatitis C virus. *J. Virol.* 88: 4195-4203.
- Dettlaff-Pokora, A., et al. 2015. Up-regulation mttp and apob gene expression in rat liver is related to post-lipectomy hypertriglyceridemia. *Cell. Physiol. Biochem.* 36: 1767-1777.
- Zhou, L., et al. 2016. FASN, ErbB2-mediated glycolysis is required for breast cancer cell migration. *Oncol. Rep.* 35: 2715-2722.
- Serviddio, G., et al. 2016. Effects of dietary fatty acids and cholesterol excess on liver injury: a lipidomic approach. *Redox Biol.* 9: 296-305.
- Lounis, M.A., et al. 2017. Oleate increases SREBP-1 signaling activity in SCD1 deficient hepatocytes. *Am. J. Physiol. Endocrinol. Metab.* 313: E710-E720.

RESEARCH USE

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