SANTA CRUZ BIOTECHNOLOGY, INC.

Fatty Acid Synthase (H-300): sc-20140

The Power to Question

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 FAS cDNA encodes a 2,504 amino acid protein. Catalytically active FAS is a homodimer. Human FAS 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 (H-300) is a rabbit polyclonal 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 IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-20140 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

Fatty Acid Synthase (H-300) is recommended for detection of Fatty Acid Synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Fatty Acid Synthase (H-300) is also recommended for detection of Fatty Acid Synthase in additional species, including equine and canine.

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: Fatty Acid Synthase (h): 293T lysate: sc-116350, SK-BR-3 cell lysate: sc-2218 or A549 cell lysate: sc-2413.

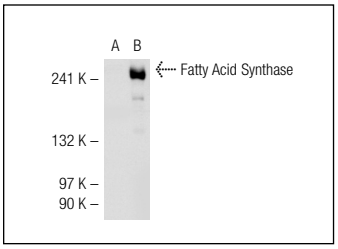
RESEARCH USE

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

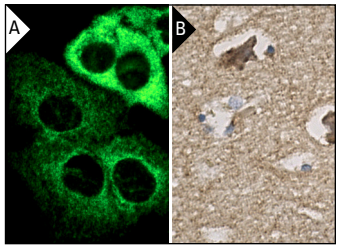
STORAGE

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 (H-300): sc-20140. Western blot analysis of UGT1A expression in non-transfected: sc-117752 (**A**) and human Fatty Acid Synthase transfected: sc-116350 (**B**) 293T whole cell lysates.



Fatty Acid Synthase (H-300): sc-20140. Immunofluorescence staining of methanol-fixed A549 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic staining of neuronal cells (**B**).

SELECT PRODUCT CITATIONS

1. Gosmain, Y., et al. 2005. Regulation of SREBP-1 expression and transcriptional action on HKII and FAS genes during fasting and refeeding in rat tissues. J. Lipid Res. 46: 697-705.
2. Ortega, F.J., et al. 2010. The gene expression of the main lipogenic enzymes is downregulated in visceral adipose tissue of obese subjects. Obesity 18: 13-20.
3. Schultz, A., et al. 2010. Swimming training beneficial effects in a mice model of nonalcoholic fatty liver disease. Exp. Toxicol. Pathol. 64: 273-282.
4. Elam, M.B., et al. 2010. Dysregulation of sterol regulatory element binding protein-1c in livers of morbidly obese women is associated with altered suppressor of cytokine signaling-3 and signal transducer and activator of transcription-1 signaling. Metab. Clin. Exp. 59: 587-598.
5. Leckstrom, A., et al. 2011. Central melanocortin receptor agonist reduces hepatic lipogenic gene expression in streptozotocin-induced diabetic mice. Life Sci. 88: 664-669.
6. Li, J., et al. 2011. Pancreatic-derived factor promotes lipogenesis in the mouse liver: role of the Forkhead box 1 signaling pathway. Hepatology 53: 1906-1916.
7. Polakof, S., et al. 2011. Insulin stimulates lipogenesis and attenuates β-oxidation in white adipose tissue of fed rainbow trout. Lipids 46: 189-199.
8. Mansour, M., et al. 2011. Thiazolidinediones/PPARγ agonists and fatty acid synthase inhibitors as an experimental combination therapy for prostate cancer. Int. J. Oncol. 38: 537-546.
9. MacDonald, M.J., et al. 2011. Differences between human and rodent pancreatic islets: low pyruvate carboxylase, atp citrate lyase, and pyruvate carboxylation and high glucose-stimulated acetoacetate in human pancreatic islets. J. Biol. Chem. 286: 18383-18396.