

Fatty Acid Synthase (C-20): sc-16147

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 homo dimer. 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.

REFERENCES

- Smith, S. 1994. The animal fatty acid synthase: one gene, one polypeptide, seven enzymes. *FASEB J.* 8: 1248-1259.
- Jayakumar, A., et al. 1994. Isolation and chromosomal mapping of genomic clones encoding the human fatty acid synthase gene. *Genomics* 23: 420-424.
- Jayakumar, A., et al. 1995. Human fatty acid synthase: properties and molecular cloning. *Proc. Natl. Acad. Sci. USA* 92: 8695-8699.
- Chirala, S.S., et al. 2001. Human fatty acid synthase: Role of interdomain in the formation of catalytically active synthase dimer. *Proc. Natl. Acad. Sci. USA* 98: 3104-3108.
- Pizer, E.S., et al. 2001. Increased fatty acid synthase as a therapeutic target in androgen-independent prostate cancer progression. *Prostate* 47: 102-110.
- Li, J.N., et al. 2001. Pharmacological inhibition of fatty acid synthase activity produces both cytostatic and cytotoxic effects modulated by p53. *Cancer Res.* 61: 1493-1499.

CHROMOSOMAL LOCATION

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

SOURCE

Fatty Acid Synthase (C-20) is an affinity purified goat polyclonal antibody raised against a peptide 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.

Blocking peptide available for competition studies, sc-16147 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Fatty Acid Synthase (C-20) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Fatty Acid Synthase (C-20) is also recommended for detection of Fatty Acid Synthase in additional species, including equine, canine, bovine, porcine and avian.

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.

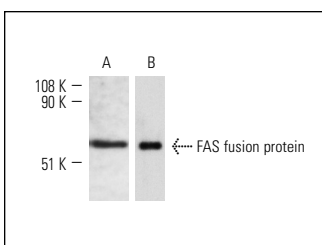
Molecular Weight of Fatty Acid Synthase: 270 kDa.

Positive Controls: A549 cell lysate: sc-2413, SK-BR-3 cell lysate: sc-2218 or AT-3 whole cell lysate.

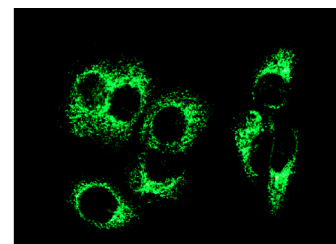
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/ 2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Western blot analysis of human recombinant Fatty Acid Synthase fusion protein (A, B). Antibodies tested include Fatty Acid Synthase (C-20): sc-16147 (A) and Fatty Acid Synthase (H-300): sc-20140 (B).



Fatty Acid Synthase (C-20): sc-16147. Immunofluorescence staining of methanol-fixed A549 cells showing cytoplasmic localization.

RESEARCH USE

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