SANTA CRUZ BIOTECHNOLOGY, INC.

FADS1 (H-40): sc-292676

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the fatty acid desaturase (FADS) family, including FADS1, FADS2 and FADS3, regulate the desaturation of fatty acids by introducing double bonds between defined carbons of fatty acyl chains, thereby playing an essential role in the lipid metabolic pathway. Members of this family share N-terminal cytochrome b5-like domains, C-terminal multiple membrane-spanning desaturase regions and three histidine box motifs. It has been suggested that single nucleotide polymorphisms (SNPs) within the FADS gene cluster may be associated with diseases related to inflammation and immunity processes. FADS1, also known as Delta-5 desaturase or D5D, is a 444 amino acid protein that is abundantly expressed in liver, brain, adrenal gland and heart. Localized to the endoplasmic reticulum where it exists as a multi-pass membrane protein, FADS1 catalyzes the biosynthesis of highly unsaturated fatty acids from linoleic acid and α-linolenic acid. Additionally, FADS1 functions to catalyze the desaturation of both dihomo-γ-linoleic acid (DHGLA) and eicosatetraenoic acid (EA) to produce arachidonic acid (AA) and eicosapentaenoic acid (EPA), respectively.

REFERENCES

1. Cho, H.P., et al. 1999. Cloning, expression, and fatty acid regulation of the human Delta-5 desaturase. J. Biol. Chem. 274: 37335-37339.
2. Marquardt, A., et al. 2000. cDNA cloning, genomic structure, and chromosomal localization of three members of the human fatty acid desaturase family. Genomics 66: 175-183.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606148. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Schaeffer, L., et al. 2006. Common genetic variants of the FADS1 FADS2 gene cluster and their reconstructed haplotypes are associated with the fatty acid composition in phospholipids. Hum. Mol. Genet. 15: 1745-1756.
5. Dreesen, T.D., et al. 2006. A newly discovered member of the fatty acid desaturase gene family: a non-coding, antisense RNA gene to Delta-5-desaturase. Prostaglandins Leukot. Essent. Fatty Acids. 75: 97-106.

CHROMOSOMAL LOCATION

Genetic locus: FADS1 (human) mapping to 11q12.2; Fads1 (mouse) mapping to 19 A.

SOURCE

FADS1 (H-40) is a rabbit polyclonal antibody raised against amino acids 131-170 mapping within an internal region of FADS1 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.

STORAGE

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

APPLICATIONS

FADS1 (H-40) is recommended for detection of FADS1 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).

FADS1 (H-40) is also recommended for detection of FADS1 in additional species, including canine.

Suitable for use as control antibody for FADS1 siRNA (h): sc-96474, FADS1 siRNA (m): sc-145002, FADS1 shRNA Plasmid (h): sc-96474-SH, FADS1 shRNA Plasmid (m): sc-145002-SH, FADS1 shRNA (h) Lentiviral Particles: sc-96474-V and FADS1 shRNA (m) Lentiviral Particles: sc-145002-V.

Molecular Weight of FADS1: 52 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or HeLa nuclear extract: sc-2120.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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