

PRODUCT INFORMATION



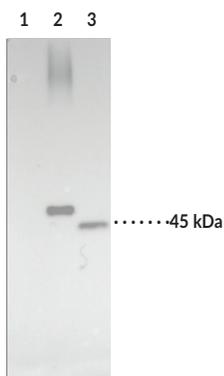
Fatty Acid Desaturase 1 Monoclonal Antibody (Clone 3A10.1)

Item No. 27533

Overview and Properties

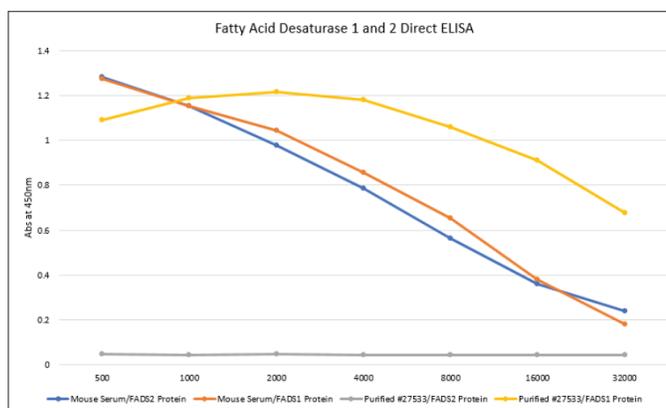
Contents: This vial contains 300 µg of protein G-purified monoclonal antibody.
Synonyms: Acyl-CoA (8-3)-Desaturase, FADS1, Δ^5 Fatty Acid Desaturase
Immunogen: Recombinant human FADS1 protein
Cross Reactivity: (+) FADS1; (-) FADS2
Species Reactivity: (+) Human; other species not tested
Uniprot No.: O60427
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥3 years
Storage Buffer: PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone: 3A10.1
Host: Mouse
Isotype: IgG1
Applications: ELISA and Western blot (WB); the recommended starting dilution for ELISA and WB is 1:1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: HEK293 vector control lysate
Lane 2: FADS1-FLAG overexpressed HEK293 lysate
Lane 3: Huh7 lysate

FADS1 Monoclonal Antibody (Clone 3A10.1)
(Item No. 27533) detects FADS1 from cell lysates.



Fatty Acid Desaturase 1 Monoclonal Antibody (Clone 3A10.1) (Item No. 27533) detects only recombinant FADS1 and not FADS2 whereas the mouse polyclonal antiserum detects both FADS1 and FADS2 by ELISA.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Fatty acid desaturase 1 (FADS1), also known as Δ^5 desaturase, is a 444-amino acid transmembrane protein encoded by *FADS1*.¹ It catalyzes conversion of dihomo- γ -linolenic acid (Item No. 90230) to arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) and ω -3 arachidonic acid (Item No. 90011) to eicosapentaenoic acid (Item Nos. 90110 | 90110.1 | 21908) during the production of ω -6 and ω -3 long-chain polyunsaturated fatty acids (LC-PUFAs), respectively. Hepatic FADS1 protein levels and mRNA expression are increased in mice with high-fat diet-induced obesity and non-alcoholic steatohepatitis (NASH).² Tissue-selective knockdown of *Fads1* in the liver, adipose tissue, and reticuloendothelial system of adult hyperlipidemic LDL receptor-null mice promotes hepatic inflammation and formation of atherosclerotic plaques and suppresses hepatic lipogenesis.³ Increased expression of FADS1 positively correlates with disease-free survival and overall survival times in patients with esophageal squamous cell carcinoma (ESCC).⁴ Cayman's Fatty Acid Desaturase 1 Monoclonal Antibody (Clone 3A10.1) can be used for immunoprecipitation (IP), ELISA, and Western blot (WB) applications. The antibody recognizes FADS1 at approximately 45 kDa from human samples.

References

1. Lattka, E., Illig, T., Heinrich, J., *et al.* FADS gene cluster polymorphisms: Important modulators of fatty acid levels and their impact on atopic diseases. *J. Nutrigenet. Nutrigenomics* **2(3)**, 119-128 (2009).
2. López-Vicario, C., González-Pérez, A., Rius, B., *et al.* Molecular interplay between $\Delta 5/\Delta 6$ desaturases and long-chain fatty acids in the pathogenesis of non-alcoholic steatohepatitis. *Gut* **63(2)**, 344-355 (2014).
3. Gromovsky, A.D., Schugar, R.C., Brown, A.L., *et al.* The Δ -5 fatty acid desaturase *FADS1* impacts metabolic disease by balancing pro-inflammatory and pro-resolving lipid mediators. *Arterioscler. Thromb. Vasc. Biol.* **38(1)**, 218-231 (2018).
4. Du, Y., Yan, S.M., Gu, W.Y., *et al.* Decreased expression of FADS1 predicts a poor prognosis in patients with esophageal squamous cell carcinoma. *Asian Pac. J. Cancer Prev.* **16(12)**, 5089-5094 (2015).

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