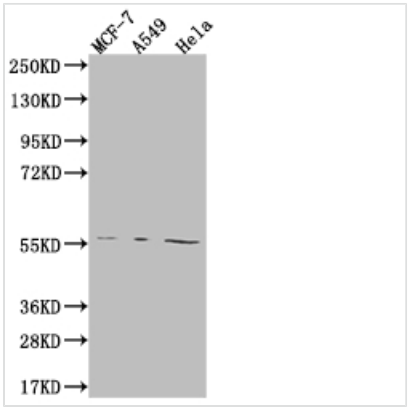
FADS1 Recombinant Monoclonal Antibody

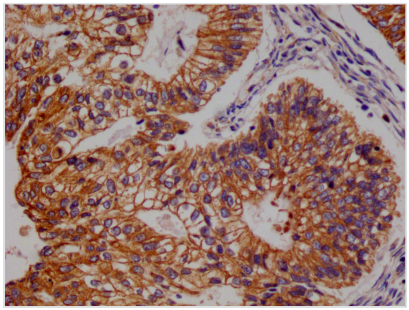
Product Code	CSB-RA155442A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	O60427
Immunogen	A synthesized peptide derived from human FADS1
Species Reactivity	Human
Tested Applications	ELISA, WB, IHC, IF, FC; Recommended dilution: WB:1:500-1:2000, IHC:1:50-1:200, IF:1:50-1:200, FC:1:50-1:200
Relevance	[Isoform 1]: Acts as a front-end fatty acyl-coenzyme A (CoA) desaturase that introduces a cis double bond at carbon 5 located between a preexisting double bond and the carboxyl end of the fatty acyl chain. Involved in biosynthesis of highly unsaturated fatty acids (HUFA) from the essential polyunsaturated fatty acids (PUFA) linoleic acid (LA) (18:2n-6) and alpha-linolenic acid (ALA) (18:3n-3) precursors. Specifically, desaturates dihomo-gamma-linoleoate (DGLA) (20:3n-6) and eicosatetraenoate (ETA) (20:4n-3) to generate arachidonate (AA) (20:4n-6) and eicosapentaenoate (EPA) (20:5n-3), respectively (PubMed:10601301, PubMed:10769175). As a rate limiting enzyme for DGLA (20:3n-6) and AA (20:4n-6)-derived eicosanoid biosynthesis, controls the metabolism of inflammatory lipids like prostaglandin E2, critical for efficient acute inflammatory response and maintenance of epithelium homeostasis. Contributes to membrane phospholipid biosynthesis by providing AA (20:4n-6) as a major acyl chain esterified into phospholipids. In particular, regulates phosphatidylinositol-4,5-bisphosphate levels, modulating inflammatory cytokine production in T-cells (By similarity). Also desaturates (11E)-octadecenoate (trans-vaccenoate)(18:1n-9), a metabolite in the biohydrogenation pathway of LA (18:2n-6) (By similarity). {ECO:0000250|UniProtKB:Q920L1, ECO:0000250|UniProtKB:Q920R3, ECO:0000269|PubMed:10601301, ECO:0000269|PubMed:10769175}.; [Isoform 2]: Does not exhibit any catalytic activity toward 20:3n-6, but it may enhance FADS2 activity. {ECO:0000250|UniProtKB:A4UVI1}.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Cancer; Cardiovascular; Tags & Cell Markers; Metabolism; Signal transduction

Gene Names	FADS1
Clone No.	7A10

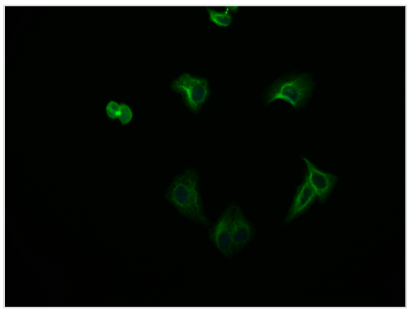
Image



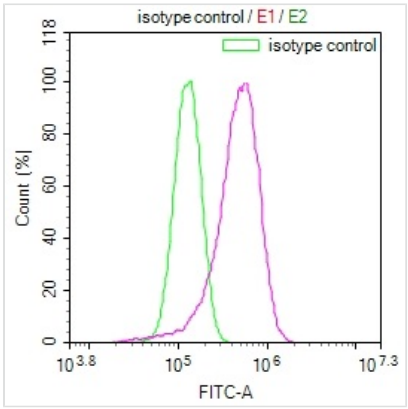
Western Blot
Positive WB detected in: MCF-7 whole cell lysate, A549 whole cell lysate, Hela whole cell lysate
All lanes: FADS1 antibody at 1:2000
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 52, 43 kDa
Observed band size: 55 kDa



IHC image of CSB-RA155442A0HU diluted at 1:100 and staining in paraffin-embedded human endometrial cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit polymer IgG labeled by HRP and visualized using 0.05% DAB.



Immunofluorescence staining of HepG2 cell with CSB-RA155442A0HU at 1:50, counter-stained with DAPI. The cells were fixed in 4% formaldehyde and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4°C. The secondary antibody was Alexa Fluor 565-congugated AffiniPure Goat Anti-Rabbit IgG(H+L).



Overlay Peak curve showing HepG2 cells stained with CSB-RA155442A0HU (red line) at 1:100. The cells were fixed in 4% formaldehyde and permeated by 0.2% TritonX-100. Then 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (1ug/1*10^6cells) for 45min at 4?. The secondary antibody used was FITC-conjugated Goat Anti-rabbit IgG(H+L) at 1:200 dilution for 35min at 4?.Control antibody (green line) was rabbit IgG (1ug/1*10^6cells) used under the same conditions. Acquisition of >10,000 events was performed.

Description

The production of the FADS1 recombinant monoclonal antibody involves a well-

defined process to ensure its efficacy and specificity. Initially, B cells are isolated from an immunized animal using a synthesized peptide derived from human FADS1 as the immunogen. Subsequently, total RNA is extracted from the isolated B cells and converted into cDNA through reverse transcription. The FADS1 antibody genes are amplified using PCR with primers specific to the antibody constant regions and inserted into an expression vector. This vector is then introduced into host cells, enabling the production of the FADS1 recombinant monoclonal antibody. The antibody is harvested from the cell culture supernatant and purified using affinity chromatography to obtain a highly purified and concentrated preparation. Extensive characterization assays, including ELISA, WB, IHC, IF, and FC analysis, are performed to validate the specificity and functionality of the antibody, confirming its ability to bind specifically to human FADS1 protein.