

Recombinant Rat FADS1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52561

Size: 10ug, 100ug

Protein Name: Acyl-CoA (8-3)-desaturase (EC 1.14.19.44) (Delta(5) fatty acid desaturase) (D5D) (Delta(5) desaturase) (Delta-5 desaturase) (Fatty acid desaturase 1)

Synonym: Fads1

UniProt ID: Q920R3

UniProt Link: www.uniprot.org/uniprotkb/Q920R3/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 447 AA

Molecular Weight: 52 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAPDPVQTPDPASAQLRQMRYFTWEEVAQRSGREKERWLVIDRKVYNISDFSRRHPGGSRVISHY
AGQDATDPFVAFHINKGLVRKYMNSLLIGELAPEQPSFEPTKNKALTDEFREL RATVERMGLMKANH
LFFLFYLLHILLDDVAAWLTLWIFGTSLVPFTLCVLLSTVQAQAGWLQHDFGHLSVFSTSTWNHLVH
HFVIGHLK GAPASWWNHMHFQHHAKPNCFRKDPDINMHPLFFALGKVLSVELGKEKKKHMPYNHQ
HKYFFLIGPPALLPLYFQWYIFYFVVRKKWVDLAWMLSFYVRVFFTYMPLLGLKGLLCLFFIVRFLES
NWFVWVTQMNHIPMHIDHNRNVDWVSTQLQATCNVHQSAFNNWFSGHLNFQIEHHLFPTMPRHNY
HKVAPLVQSLCAKYGIKYESKPLLTAFA DIVYSLKESGQLWL DAYLHQ

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Acyl-CoA (8-3)-desaturase (EC 1.14.19.44) (Delta(5) fatty acid desaturase) (D5D) (Delta(5) desaturase) (Delta-5 desaturase) (Fatty acid desaturase 1) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: 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:24070791). 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) (PubMed:24070791).

Subcellular Localization: Endoplasmic reticulum membrane ; Multi-pass membrane protein . Mitochondrion .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.