

Datasheet for ABIN3083075

ALOX5 Protein (AA 1-674) (Strep Tag)



[Go to Product page](#)

1 Image

Overview

Quantity:	1 mg
Target:	ALOX5
Protein Characteristics:	AA 1-674
Origin:	Human
Source:	Tobacco (<i>Nicotiana tabacum</i>)
Protein Type:	Recombinant
Purification tag / Conjugate:	This ALOX5 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MPSYTVTVAT GSQWFAGTDD YIYLSLVGSA GCSEKHLDDK PFYNDFERGA VDSYDVTVD ELGEIQLVRI EKRKYWLND D WYLKYITLKT PHGDYIEFPC YRWITGDVEV VLRDGRAKLA RDDQIHILKQ HRRKELETRQ KQYRWMWNP GFPLSIDAKC HKDLPRDIQF DSEKGVDFVL NYSKAMENLF INRFMHMFQS SWNDFADFEK IFVKISNTIS ERVMNHWQED LMFGYQFLNG CNPVLIRRCT ELPEKLPVTT EMVECSLERQ LSLEQEVQQG NIFIVDFELL DGIDANKTDP CTLQFLAAPI CLLYKNLANK IVPIAIQLNQ IPGDENPIFL PSDAKYDWLL AKIWRSSDF HVHQITITHLL RTHLVSEVFG IAMYRQLPAV HPIFKLLVAH VRFTIAINTK AREQLICEG LFDKANATGG GGHVQMVQRA MKDLTYASLC FPEAIKARGM ESKEDIPYYF YRDDGLLVWE AIRTFTAQVQV DIYEGDQV EEDPELQDFV NDVYVYGMRG RKSSGFPSKSV KSREQLSEYL TVVIFTASAQ HAAVNFQYD WCSWIPNAPP TMRAPPPTAK GVTIEQIVD TLPDRGRSCW HLGAVWALSQ FQENELFLGM YPEEHFIEKP VKEAMARFRK NLEAIVSVIA ERNKKKQLPY YYLSPDRIPN SVAI
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Sequence without tag. The proposed Strep-Tag is based on experience s with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.

Characteristics:

Key Benefits:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a **made-to-order protein** and will be made for the first time for your order. Our experts in the lab will ensure that you receive a correctly folded protein.

The big advantage of ordering our **made-to-order proteins** in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.
- During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Concentration:

- The concentration of our recombinant proteins is measured using the absorbance at 280nm.
- The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.
- We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.

Purification:

Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):

Product Details

1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE.
2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.

Purity: >80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

Endotoxin Level: Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

Grade: Crystallography grade

Target Details

Target: ALOX5

Alternative Name: ALOX5 ([ALOX5 Products](#))

Background: Polyunsaturated fatty acid 5-lipoxygenase (EC 1.13.11.-) (Arachidonate 5-lipoxygenase) (5-LO) (5-lipoxygenase) (EC 1.13.11.34),FUNCTION: Catalyzes the oxygenation of arachidonate ((5Z,8Z,11Z,14Z)-eicosatetraenoate) to 5-hydroperoxyeicosatetraenoate (5-HPETE) followed by the dehydration to 5,6- epoxyeicosatetraenoate (Leukotriene A4/LTA4), the first two steps in the biosynthesis of leukotrienes, which are potent mediators of inflammation (PubMed:8631361, PubMed:21233389, PubMed:22516296, PubMed:24282679, PubMed:19022417, PubMed:23246375, PubMed:8615788, PubMed:24893149, PubMed:31664810). Also catalyzes the oxygenation of arachidonate into 8-hydroperoxyicosatetraenoate (8-HPETE) and 12-hydroperoxyicosatetraenoate (12-HPETE) (PubMed:23246375). Displays lipoxin synthase activity being able to convert (15S)-HETE into a conjugate tetraene (PubMed:31664810). Although arachidonate is the preferred substrate, this enzyme can also metabolize oxidized fatty acids derived from arachidonate such as (15S)-HETE, eicosapentaenoate (EPA) such as (18R)- and (18S)-HEPE or docosahexaenoate (DHA) which lead to the formation of specialized pro-resolving mediators (SPM) lipoxin and resolvins E and D respectively, therefore it participates in anti-inflammatory responses (PubMed:21206090, PubMed:31664810, PubMed:8615788, PubMed:17114001, PubMed:32404334). Oxidation of DHA directly inhibits endothelial cell proliferation and sprouting angiogenesis via peroxisome proliferator-activated receptor gamma (PPARgamma) (By similarity). It does not catalyze the oxygenation of linoleic acid and does not convert (5S)-HETE to lipoxin isomers (PubMed:31664810). In addition to inflammatory processes, it participates in dendritic cell migration, wound healing through an antioxidant mechanism based on heme oxygenase-1 (HO-1) regulation expression, monocyte adhesion to the endothelium via ITGAM expression on monocytes (By similarity). Moreover, it

Target Details

helps establish an adaptive humoral immunity by regulating primary resting B cells and follicular helper T cells and participates in the CD40-induced production of reactive oxygen species (ROS) after CD40 ligation in B cells through interaction with PIK3R1 that bridges ALOX5 with CD40 (PubMed:21200133). May also play a role in glucose homeostasis, regulation of insulin secretion and palmitic acid-induced insulin resistance via AMPK (By similarity). Can regulate bone mineralization and fat cell differentiation increases in induced pluripotent stem cells (By similarity). {ECO:0000250|UniProtKB:P48999, ECO:0000269|PubMed:17114001, ECO:0000269|PubMed:19022417, ECO:0000269|PubMed:21200133, ECO:0000269|PubMed:21206090, ECO:0000269|PubMed:21233389, ECO:0000269|PubMed:22516296, ECO:0000269|PubMed:23246375, ECO:0000269|PubMed:24282679, ECO:0000269|PubMed:24893149, ECO:0000269|PubMed:31664810, ECO:0000269|PubMed:32404334, ECO:0000269|PubMed:8615788, ECO:0000269|PubMed:8631361}.

Molecular Weight: 78.0 kDa

UniProt: [P09917](#)

Application Details

Application Notes: In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.

Comment: ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.

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Restrictions: For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)

Images



Image 1. „Crystallography Grade“ protein due to multi-step, protein-specific purification process