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Datasheet for ABIN3093643
ALOX12 Protein (AA 1-663) (Strep Tag)

Overview

Quantity:	1 mg
Target:	ALOX12
Protein Characteristics:	AA 1-663
Origin:	Human
Source:	Tobacco (<i>Nicotiana tabacum</i>)
Protein Type:	Recombinant
Purification tag / Conjugate:	This ALOX12 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence: MGRYRIRVAT GAWLFSGSYN RVQLWLVGTR GEAELELQLR PARGEEEEFD HDVAEDLGLL
QFVRLRKHHW LVDDAWFCDR ITVQGGGACA EVAFPYRWV QGEDILSLPE GTARLPGDNA
LDMFQKHREK ELKDRQIYC WATWKEGLPL TIAADRKDDL PPNMRFHEEK RLD FEWTLKA
GALEMALKRV YTLSSWNCL EDFDQIFWGQ KSALAEKVRQ CWQDDELFSY QFLNGANPML
LRRSTSLPSR LVLPSGMEEL QAQLEKELQN GSLFEADFIL LDGIPANVIR GEKQYLAAPL
VMLKMEPNGK LQPMVIQIQP PNPSSPTPTL FLPSDPPLAW LLAWSWRNS DFQLHEIQYH
LLNTHLVAEV IAVATMRCLP GLHPIFKFLI PHIRYTM EIN TRARTQLISD GGIFDKAVST
GGGGHVQLLR RAAAQLTYCS LCPPDDLADR GLLGLPGALY AHDALRLWEI IARYVEGIVH
LFYQRDDIVK GDPELQAWCR EITEVGLCQA QDRGFPVSFQ SQSQLCHFILT MCVFTCTAQH
AAINQGQLDW YAWVPNAPCT MRMPPTTKE DVTMATVMGS LPDVRQACLQ MAISWHL SRR
QPDMVPLGHH KEKYFSGPKP KAVLNQFR TD LEKLEKEITA RNEQLDWPYE YLKPSCIENS VT I
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®):

1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag
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Product Details

- 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: ALOX12

Alternative Name: ALOX12 ([ALOX12 Products](#))

Background: Polyunsaturated fatty acid lipoxygenase ALOX12 (EC 1.13.11.-) (Arachidonate (12S)-lipoxygenase) (12S-LOX) (12S-lipoxygenase) (EC 1.13.11.31) (Arachidonate (15S)-lipoxygenase) (EC 1.13.11.33) (Linoleate (13S)-lipoxygenase) (Lipoxin synthase 12-LO) (EC 3.3.2.-) (Platelet-type lipoxygenase 12),FUNCTION: Catalyzes the regio and stereo-specific incorporation of molecular oxygen into free and esterified polyunsaturated fatty acids generating lipid hydroperoxides that can be further reduced to the corresponding hydroxy species (PubMed:17493578, PubMed:1851637, PubMed:8319693, PubMed:8500694, PubMed:18311922, PubMed:32404334). Mainly converts arachidonate ((5Z,8Z,11Z,14Z)-eicosatetraenoate) to the specific bioactive lipid (12S)-hydroperoxyeicosatetraenoate/(12S)-HPETE (PubMed:17493578, PubMed:22984144, PubMed:24282679, PubMed:8319693, PubMed:8500694). Through the production of bioactive lipids like (12S)-HPETE it regulates different biological processes including platelet activation (PubMed:8319693, PubMed:8500694). It can also catalyze the epoxidation of double bonds of polyunsaturated fatty acids such as (14S)-hydroperoxy-docosahexaenoate/(14S)-HPDHA resulting in the formation of (13S,14S)-epoxy-DHA (PubMed:23504711). Furthermore, it may participate in the sequential oxidations of DHA ((4Z,7Z,10Z,13Z,16Z,19Z)-docosahexaenoate) to generate specialized pro-resolving mediators (SPMs) like resolvin D5 ((7S,17S)-diHPDHA) and (7S,14S)-diHPDHA, that actively down-regulate the immune response and have anti-aggregation properties with platelets (PubMed:32404334). An additional function involves a multistep process by which it transforms leukotriene A4/LTA4 into the bioactive lipids lipoxin A4/LXA4 and lipoxin B4/LXB4, both are vasoactive and LXA4 may regulate neutrophil function via occupancy of specific recognition sites (PubMed:8250832). Can also peroxidize linoleate ((9Z,12Z)-octadecadienoate) to (13S)-hydroperoxyoctadecadienoate/ (13S-HPODE) (By

Target Details

similarity). Due to its role in regulating both the expression of the vascular endothelial growth factor (VEGF, an angiogenic factor involved in the survival and metastasis of solid tumors) and the expression of integrin beta-1 (known to affect tumor cell migration and proliferation), it can be regarded as protumorigenic (PubMed:9751607, PubMed:16638750, PubMed:22237009).

Important for cell survival, as it may play a role not only in proliferation but also in the prevention of apoptosis in vascular smooth muscle cells (PubMed:23578768).

{ECO:0000250|UniProtKB:P39655, ECO:0000269|PubMed:16638750, ECO:0000269|PubMed:17493578, ECO:0000269|PubMed:18311922, ECO:0000269|PubMed:1851637, ECO:0000269|PubMed:22237009, ECO:0000269|PubMed:22984144, ECO:0000269|PubMed:23504711, ECO:0000269|PubMed:23578768, ECO:0000269|PubMed:24282679, ECO:0000269|PubMed:32404334, ECO:0000269|PubMed:8250832, ECO:0000269|PubMed:8319693, ECO:0000269|PubMed:8500694, ECO:0000269|PubMed:9751607}.

Molecular Weight: 75.7 kDa

UniProt: [P18054](#)

Pathways: [Positive Regulation of Endopeptidase Activity](#)

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)