

Datasheet for ABIN3077999

**CYP1A1 Protein (AA 1-512) (Strep Tag)**[Go to Product page](#)**1** Image

## Overview

Quantity:	1 mg
Target:	CYP1A1
Protein Characteristics:	AA 1-512
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This CYP1A1 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

## Product Details

Sequence: MLFPISMSAT ELLASVIFC LVFWVIRASR PQVPKGLKNP PGPWGWPLIG HMLTLGKNPH  
LALS RMSQQY GDVLQIRIGS TPVVVLSGLD TIRQALVRQG DDFKGRPDLY TFTLISNGQS  
MSFSPDSGPV WAARRRLAQN GLKSFSIASD PASSTSCYLE EHVSKEAEVL ISTLQELMAG  
PGHFNPYRYV VVSVTNVICA ICFGRRYDHN HQELLSLVNL NNNFGEVVGS GNPADFIPIL  
RYLPNPSLNA FKDLNEKFYS FMQKMVKEHY KTFEKGHIRD ITDSLIEHCQ EKQLDENANV  
QLSDEKIINI VLDLFGAGFD TVTTAISWSL MYLVMNPRVQ RKIQEELDTV IGRSRRPRLS  
DRSHLPYMEA FILETFRHSS FVPFTIPHST TRDTSKGFY IPKGRCVFVN QWQINHDQKL  
WVNPSEFLPE RFLTPDGAID KVLSEKVIIF GMGKRKCIGE TIARWEVFLF LAILLQRVEF  
SVPLGVKVD M TPIYGLTMKH ACCEHFQMQ L RS

**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.

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### 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 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

Product Details

	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:	CYP1A1
Alternative Name:	CYP1A1 ( <a href="#">CYP1A1 Products</a> )
Background:	<p>Cytochrome P450 1A1 (CYPIA1) (EC 1.14.14.1) (Cytochrome P450 form 6) (Cytochrome P450-C) (Cytochrome P450-P1) (Hydroperoxy icosatetraenoate dehydratase) (EC 4.2.1.152),FUNCTION: A cytochrome P450 monooxygenase involved in the metabolism of various endogenous substrates, including fatty acids, steroid hormones and vitamins (PubMed:11555828, PubMed:14559847, PubMed:12865317, PubMed:15805301, PubMed:15041462, PubMed:18577768, PubMed:19965576, PubMed:20972997, PubMed:10681376). Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate, and reducing the second into a water molecule, with two electrons provided by NADPH via cytochrome P450 reductase (NADPH--hemoprotein reductase) (PubMed:11555828, PubMed:14559847, PubMed:12865317, PubMed:15805301, PubMed:15041462, PubMed:18577768, PubMed:19965576, PubMed:20972997, PubMed:10681376). Catalyzes the hydroxylation of carbon-hydrogen bonds. Exhibits high catalytic activity for the formation of hydroxysteroids from estrone (E1) and 17beta-estradiol (E2), namely 2-hydroxy E1 and E2, as well as D-ring hydroxylated E1 and E2 at the C15-alpha and C16-alpha positions (PubMed:11555828, PubMed:14559847, PubMed:12865317, PubMed:15805301). Displays different regioselectivities for polyunsaturated fatty acids (PUFA) hydroxylation (PubMed:15041462, PubMed:18577768). Catalyzes the epoxidation of double bonds of certain PUFA (PubMed:15041462, PubMed:19965576, PubMed:20972997). Converts arachidonic acid toward epoxyeicosatrienoic acid (EET) regioisomers, 8,9-, 11,12-, and 14,15-EET, that function as lipid mediators in the vascular system (PubMed:20972997). Displays an absolute stereoselectivity in the epoxidation of eicosapentaenoic acid (EPA) producing the 17(R),18(S) enantiomer (PubMed:15041462). May play an important role in all-trans retinoic acid biosynthesis in extrahepatic tissues. Catalyzes two successive oxidative transformation of all-trans retinol to all-trans retinal and then to the active form all-trans retinoic acid (PubMed:10681376). May also participate in eicosanoids metabolism by converting</p>

## Target Details

hydroperoxide species into oxo metabolites (lipoxygenase-like reaction, NADPH-independent) (PubMed:21068195). {ECO:0000269|PubMed:10681376, ECO:0000269|PubMed:11555828, ECO:0000269|PubMed:12865317, ECO:0000269|PubMed:14559847, ECO:0000269|PubMed:15041462, ECO:0000269|PubMed:15805301, ECO:0000269|PubMed:18577768, ECO:0000269|PubMed:19965576, ECO:0000269|PubMed:20972997, ECO:0000269|PubMed:21068195}.

Molecular Weight: 58.2 kDa

UniProt: [P04798](#)

Pathways: [Steroid Hormone Biosynthesis](#), [Regulation of Lipid Metabolism by PPARalpha](#)

## 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.

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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

## Handling

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Storage Comment: Store at -80°C.

Expiry Date: Unlimited (if stored properly)

## Images

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