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Datasheet for ABIN3075260

## USP12 Protein (AA 1-370) (Strep Tag)

### 1 Image

#### Overview

Quantity:	1 mg
Target:	USP12
Protein Characteristics:	AA 1-370
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This USP12 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

#### Product Details

Sequence: MEILMTVSKF ASICTMGANA SALEKEIGPE QFPVNEHYFG LVNFGNTCYC NSVLQALYFC  
RPFREKVLAY KSQPRKKESL LTCLADLFHS IATQKKKVG V IPPKKFITRL RKENELFDNY  
MQQDAHEFLN YLLNTIADIL QEERKQEKQN GRLPNGNIDN ENNSTPDPT WVHEIFQGTL  
TNETRCLTCE TISSKDEDFL DLSVDVEQNT SITHCLRGFS NTETLCSEYK YYCEECSRKQ  
EAHKRMKVKK LPMILALHLK RFKYMDQLHR YTKLSYRVVF PLELRLFNTS GDATNPDRMY  
DLVAVVHCG SGPNRGHYIA IVKSHDFWLL FDDDIVEKID QAIEEFYGL TSDISKNSES  
GYILFYQSRD

**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 Exspasy'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 Western blot.

## Product Details

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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

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Target:	USP12
Alternative Name:	USP12 ( <a href="#">USP12 Products</a> )
Background:	<p>Ubiquitin carboxyl-terminal hydrolase 12 (EC 3.4.19.12) (Deubiquitinating enzyme 12) (Ubiquitin thioesterase 12) (Ubiquitin-hydrolyzing enzyme 1) (Ubiquitin-specific-processing protease 12),FUNCTION: Deubiquitinating enzyme that plays various roles in the regulation of the immune response and inflammation (PubMed:19075014, PubMed:27373336). In complex with WDR48, acts as a potential tumor suppressor by positively regulating PHLPP1 stability (PubMed:24145035). During TCR engagement and activation, translocates into the cytoplasm and deubiquitinates its substrates LAT and TRAT1 and prevents their lysosome-dependent degradation to stabilize the TCR signaling complex at the plasma membrane (PubMed:26811477). Plays an essential role in the selective LPS-induced macrophage response through the activation of NF-kappa-B pathway (PubMed:28063927). In addition, promotes that antiviral immune response through targeting DNA sensor IFI16 to inhibit its proteasome-dependent degradation (PubMed:37410794). Participates in the interferon signaling pathway and antiviral response independently of its deubiquitinase activity by maintaining nuclear phosphorylated STAT1 levels via inhibition of its CREBBP-mediated acetylation and subsequent dephosphorylation (PubMed:31899788). Plays an intrinsic role in promoting the differentiation, activation and proliferation of CD4(+) T-cell by activating the NF-kappa-B signaling pathway through deubiquitinating and stabilizing B-cell lymphoma/leukemia 10/BCL10 (By similarity). In myeloid-derived suppressor cells promotes the activation of the NF-kappa-B via deubiquitination and stabilization of RELA (By similarity). Regulates the 'Lys-63'-linked polyubiquitin chains of BAX and thereby modulates the mitochondrial apoptotic process (PubMed:36361894). {ECO:0000250 UniProtKB:Q9D9M2, ECO:0000269 PubMed:19075014, ECO:0000269 PubMed:24145035, ECO:0000269 PubMed:26811477, ECO:0000269 PubMed:27373336, ECO:0000269 PubMed:28063927, ECO:0000269 PubMed:31899788, ECO:0000269 PubMed:36361894, ECO:0000269 PubMed:37410794}., FUNCTION: (Microbial infection) Forms a complex with Epstein-Barr virus protein EBNA3 which is an active deubiquitinase activity that may select specific substrates to promote B-lymphocyte transformation.</p>

## Target Details

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{ECO:0000269|PubMed:25855980}.

Molecular Weight: 42.9 kDa

UniProt: [O75317](#)

## Application Details

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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.

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!

Restrictions: For Research Use only

## Handling

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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)



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