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Datasheet for ABIN3137592
PAD4 Protein (AA 1-666) (Strep Tag)

Overview

Quantity:	1 mg
Target:	PAD4 (PADI4)
Protein Characteristics:	AA 1-666
Origin:	Mouse
Source:	Tobacco (<i>Nicotiana tabacum</i>)
Protein Type:	Recombinant
Purification tag / Conjugate:	This PAD4 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence: MAQGAVIHVA PEQPTHAVCV VGTATPLDVR GSAPKGYTTF GITASPGVIV DVIHGPPVKK
STMGASKWPL DPELEVTLQV KAASSRTDDE KVRVSYYGPK TSPVQALIYI TGVELSLSAD
VTRTGRVKPA QAGKDQSTWT WPGGGRGAIL LVNCDKEDPQ ASGDMDFEDDK ILDNKDLQDM
SPMTLSTKTP KDFFEKYQLV LEVPKAKMNR VRVFRATR GK LPSRYKVALG PQQFSYCLEL
PGGQHSTDFY VEGLAFPDAD FKGLIPLTIS LLDKSNPELP EALVFQDSVT FRVAPWIMTP
NTQPPQEVYV CRVSDNEDFL KSLATLT KKA KCKLTVCP EE ENIDDQWMQD EMEIGYIQAP
HKTLPVV FDS PRDRGLKDFP VKRVMGPNFG YVTRKLYMSE LTGLDAFGNL EVSPPVTVRG
KEYPLGRILI GNSGYSSSES RDMHQALQDF LSAQQVQAPV RLFSDWLFVG HVDEF LSFVP
ARDKQGFRL LSSPRACYQL FQELQSQGHG EATLF EGLKR KRQTINEILS NKKLRDQ NAY
VESCIDWNRA VLKRELGLAE GDIIDIPQLF KLAGNSRGNS KAQAFFPNMV NMLVLGKYL G
IPKPF GPIID GHCCLEEEVR SHLEPLGLHC TFINDFYTYH VYNGEVHCGT NVRRKPFTFK
WWHMVP

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: $\geq 80\%$ 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: PAD4 (PADI4)

Alternative Name: Padi4 ([PADI4 Products](#))

Background: Protein-arginine deiminase type-4 (EC 3.5.3.15) (Peptidylarginine deiminase IV) (Protein-arginine deiminase type IV),FUNCTION: Catalyzes the citrullination/deimination of arginine residues of proteins such as histones, thereby playing a key role in histone code and regulation of stem cell maintenance (PubMed:15339660, PubMed:32528174). Citrullinates histone H1 at 'Arg-54' (to form H1R54ci), histone H3 at 'Arg-2', 'Arg-8', 'Arg-17' and/or 'Arg-26' (to form H3R2ci, H3R8ci, H3R17ci, H3R26ci, respectively) and histone H4 at 'Arg-3' (to form H4R3ci) (PubMed:15339660). Acts as a key regulator of stem cell maintenance by mediating citrullination of histone H1: citrullination of 'Arg-54' of histone H1 (H1R54ci) results in H1 displacement from chromatin and global chromatin decondensation, thereby promoting pluripotency and stem cell maintenance (PubMed:24463520, PubMed:32528174). Promotes profound chromatin decondensation during the innate immune response to infection in neutrophils by mediating formation of H1R54ci (PubMed:20733033, PubMed:23650392). Required for the formation of neutrophil extracellular traps (NETs), NETs are mainly composed of DNA fibers and are released by neutrophils to bind pathogens during inflammation (PubMed:20733033, PubMed:32528174). Citrullination of histone H3 prevents their methylation by CARM1 and HRMT1L2/PRMT1 and represses transcription (By similarity). Citrullinates EP300/P300 at 'Arg-2142', which favors its interaction with NCOA2/GRIP1 (By similarity). {ECO:0000250|UniProtKB:Q9UM07, ECO:0000269|PubMed:15339660, ECO:0000269|PubMed:20733033, ECO:0000269|PubMed:23650392, ECO:0000269|PubMed:24463520, ECO:0000269|PubMed:32528174}.

Molecular Weight: 74.4 kDa

Target Details

UniProt: [Q9Z183](#)

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.

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

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)