Datasheet for ABIN3133069

RAG1 Protein (AA 1-1040) (Strep Tag)

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Overview

Quantity:	1 mg
Target:	RAG1
Protein Characteristics:	AA 1-1040
Origin:	Mouse
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This RAG1 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

Product Details

Sequence:	MAASLPSTLS FSSAPDEIQH PQIKFSEWKF KLFRVRSFEK APEEAQKEKD SSEGKPYLEQ SPVVPEKPGG QNSILTQRAL KLHPKFSKKF HADGKSSDKA VHQARLRHFC RICGNRFKSD GHSRRYPVHG PVDAKTQSLF RKKEKRVTSW PDLIARIFRI DVKADVDSIH PTEFCHDCWS IMHRKFSSSH SQVYFPRKVT VEWHPHTPSC DICFTAHRGL KRKRHQPNVQ LSKKLKTVLN HARRDRRKRT QARVSSKEVL KKISNCSKIH LSTKLLAVDF PAHFVKSISC QICEHILADP VETSCKHLFC RICILRCLKV MGSYCPSCRY PCFPTDLESP VKSFLNILNS LMVKCPAQDC NEEVSLEKYN HHVSSHKESK ETLVHINKGG RPRQHLLSLT RRAQKHRLRE LKIQVKEFAD KEEGGDVKAV CLTLFLLALR ARNEHRQADE LEAIMQGRGS GLQPAVCLAI RVNTFLSCSQ YHKMYRTVKA ITGRQIFQPL HALRNAEKVL LPGYHPFEWQ PPLKNVSSRT DVGIIDGLSG LASSVDEYPV DTIAKRFRYD SALVSALMDM EEDILEGMRS QDLDDYLNGP FTVVVKESCD GMGDVSEKHG SGPAVPEKAV RFSFTVMRIT IEHGSQNVKV FEEPKPNSEL CCKPLCLMLA DESDHETLTA ILSPLIAERE AMKSSELTLE MGGIPRTFKF IFRGTGYDEK LVREVEGLEA

SGSVYICTLC DTTRLEASQN LVFHSITRSH AENLQRYEVW RSNPYHESVE ELRDRVKGVS AKPFIETVPS IDALHCDIGN AAEFYKIFQL EIGEVYKHPN ASKEERKRWQ ATLDKHLRKR MNLKPIMRMN GNFARKLMTQ ETVDAVCELI PSEERHEALR ELMDLYLKMK PVWRSSCPAK ECPESLCQYS FNSQRFAELL STKFKYRYEG KITNYFHKTL AHVPEIIERD GSIGAWASEG NESGNKLFRR FRKMNARQSK CYEMEDVLKH HWLYTSKYLQ KFMNAHNALK SSGFTMNSKE TLGDPLGIED SLESQDSMEF

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.

Product Details

	• 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 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)

Target Details

Target:	RAG1
Alternative Name:	Rag1 (RAG1 Products)
Background:	V(D)J recombination-activating protein 1 (RAG-1) [Includes: Endonuclease RAG1 (EC 3.1.-.-), E3 ubiquitin-protein ligase RAG1 (EC 2.3.2.27) (RING-type E3 ubiquitin transferase RAG1)],FUNCTION: Catalytic component of the RAG complex, a multiprotein complex that mediates the DNA cleavage phase during V(D)J recombination. V(D)J recombination assembles a diverse repertoire of immunoglobulin and T-cell receptor genes in developing B and T-lymphocytes through rearrangement of different V (variable), in some cases D (diversity), and J (joining) gene segments. In the RAG complex, RAG1 mediates the DNA-binding to the conserved recombination signal sequences (RSS) and catalyzes the DNA cleavage activities by introducing a double-strand break between the RSS and the adjacent coding segment. RAG2 is not a catalytic component but is required for all known catalytic activities. DNA cleavage occurs in 2 steps: a first nick is introduced in the top strand immediately upstream of the heptamer, generating a 3'-hydroxyl group that can attack the phosphodiester bond on the opposite strand in a direct transesterification reaction, thereby creating 4 DNA ends: 2 hairpin coding ends and 2 blunt, 5'-phosphorylated ends. The chromatin structure plays an essential role in the V(D)J recombination reactions and the presence of histone H3 trimethylated at 'Lys-4' (H3K4me3) stimulates both the nicking and haipinning steps. The RAG complex also plays a role in pre-B cell allelic exclusion, a process leading to expression of a single immunoglobulin heavy chain

Target Details

	allele to enforce clonality and monospecific recognition by the B-cell antigen receptor (BCR) expressed on individual B-lymphocytes. The introduction of DNA breaks by the RAG complex on one immunoglobulin allele induces ATM-dependent repositioning of the other allele to pericentromeric heterochromatin, preventing accessibility to the RAG complex and recombination of the second allele. In addition to its endonuclease activity, RAG1 also acts as an E3 ubiquitin-protein ligase that mediates monoubiquitination of histone H3. Histone H3 monoubiquitination is required for the joining step of V(D)J recombination. Mediates polyubiquitination of KPNA1. {ECO:0000269|PubMed:10601032, ECO:0000269|PubMed:10678172, ECO:0000269|PubMed:12629039, ECO:0000269|PubMed:14671314, ECO:0000269|PubMed:17028591, ECO:0000269|PubMed:19118899, ECO:0000269|PubMed:19396172, ECO:0000269|PubMed:19448632, ECO:0000269|PubMed:19524534, ECO:0000269|PubMed:20122409, ECO:0000269|PubMed:22157821, ECO:0000269|PubMed:2598259, ECO:0000269|PubMed:8521468, ECO:0000269|PubMed:9094713}.
Molecular Weight:	119.2 kDa
UniProt:	P15919

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)