

Datasheet for ABIN7562894  
**RAG1 Protein (AA 1-1040) (His tag)**



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## Overview

Quantity:	1 mg
Target:	RAG1
Protein Characteristics:	AA 1-1040
Origin:	Mouse
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This RAG1 protein is labelled with His tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS)

## Product Details

Purpose:	Custom-made recombinat Rag1 Protein expressed in mammalian cells.
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 HHVSSHESK ETLVHINKGG RPRQHLLSLT RRAQKHRLRE LKIQVKEFAD KEEGDVKAV CLTLFLLALR ARNEHRQADE LEAIMQGRGS GLQPAVCLAI RVNTFLSCSQ YHKMYRTVKA ITGRQIFQPL HALRNAEKVL LPGYHPFEWQ PPLKNVSSRT DVGIIDGLSG LASSVDEYPV DTIAKRFRYD SALVSALMDM EEDILEGMRS QDLDDYLNGP FTVVVKESCD GMGDVSEKHG SGPAVPEKAV RFSFTVMRIT IEHGSQNVKV FECPKPNSEL 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 KITNYFHKTAL AHVPEIIERD GSIGAWASEG  
NESGNKLFRR FRKMNARQSK CYEMEDVLKH HWLYTSKYLQ KFMNAHNALK SSGFTMNSKE  
TLGDPLGIED SLESQDSMEF **Sequence without tag. The proposed Purification-Tag is based on experiences 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 to order protein - from design to production - by highly experienced protein experts.
- Protein expressed in mammalian cells and purified in one-step affinity chromatography
- The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins.
- 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 try to ensure that you receive soluble protein.

If you are not interested in a full length protein, please contact us for individual protein fragments.

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.

Purity:

> 90 % as determined by Bis-Tris Page, Western Blot

Grade:

custom-made

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

Target Details

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 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.

Application Details

Restrictions: For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months