

# Active Recombinant Full Length Streptococcus pyogenes serotype M1 type II CRISPR RNA-guided endonuclease Cas9 Protein, GFP-tagged

**Cat. No.** CAS9-22S    **Lot. No.** (See product label)

## SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <b>Product Overview</b> | Recombinant Full Length Streptococcus pyogenes serotype M1 Cas9 Protein with GFP-tag was expressed in E. coli.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Species</b>          | Streptococcus pyogenes serotype M1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Source</b>           | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>ProteinLength</b>    | Full length                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Description</b>      | <p>CRISPR (clustered regularly interspaced short palindromic repeat) is an adaptive immune system that provides protection against mobile genetic elements (viruses, transposable elements and conjugative plasmids). CRISPR clusters contain spacers, sequences complementary to antecedent mobile elements, and target invading nucleic acids. CRISPR clusters are transcribed and processed into CRISPR RNA (crRNA). In type II CRISPR systems correct processing of pre-crRNA requires a trans-encoded small RNA (tracrRNA), endogenous ribonuclease 3 (rnc) and this protein. The tracrRNA serves as a guide for ribonuclease 3-aided processing of pre-crRNA. Subsequently Cas9/crRNA/tracrRNA endonucleolytically cleaves linear or circular dsDNA target complementary to the spacer; Cas9 is inactive in the absence of the 2 guide RNAs (gRNA). Cas9 recognizes the protospacer adjacent motif (PAM) in the CRISPR repeat sequences to help distinguish self versus nonself, as targets within the bacterial CRISPR locus do not have PAMs. PAM recognition is also</p> |

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required for catalytic activity.

**Tag** C-GFP

**Molecular Mass** 194 kDa

**AA Sequence**

SGRKKRRQRRRPQGGSPAARKVKLDGGSPAARKVKLDGGSPAARKVKLDGGSPA  
AKRVKLDGIHGVPAAATMDKKYSIGLDIGTNSVGWAVITDEYKVPSKKFKVLGNTDRH  
SIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEIFSNEMAKVDDSFH  
RLEESFLVEEDKKHERHPIFGNIVDEVAYHEKYPTIYHLRKKLVDSTDKADLRILIYAL  
AHMIKFRGHFLIEGDLNPDNSDVKLFIQLVQTYNQLFEENPINASGVDAKILSARLS  
KSRLENLIAQLPGEKKNGLFGNLIALSLGLTPNFKSNFDLAEDAKLQLSKDTYDDDL  
DNLLAQIGDQYADLFLAAKNLSDAILLSDILRVNTEITKAPLSASMIKRYDEHHQDLTLL  
KALVRQQLPEKYKEIFFDQSKNGYAGYIDGGASQEEFYKFIKPILEKMDGTEELLVKL  
NREDLLRKQRTFDNGSIPHQIHLGELHAILRRQEDFYFPLKDNREKIEKILTRIPYYV  
GPLARGNSRFAWMTRKSEETITPWNFEEVVDKGASAQSFIERMTNFDKNLPNEKVL  
PKHSLLEYEFTVYNELTKVKYVTEGMRKPAFLSGEQKKAIVDLLFKTNRKVTVKQLKE  
DYFKKIECFDSVEISGVEDRFNASLGTYHDLLKIIKDKDFLDNEENEDILEDIVLTLTLF  
EDREMIEERLKTYAHLFDDKVMKQLKRRRYTGWGRLSRKLINGIRDQSGKTILDFL  
KSDGFANRNFQMQLIHDDSLTFKEDIQKAQVSGQGDSLHEHIANLAGSPAIKKGILQTV  
KVVDLVKVMGRHKPENIVIAMARENQTTQKGQKNSRERMKRIEEGIKELGSQILKE  
HPVENTQLQNEKLYLYLQNGRDMYVDQELDINRLSDYDVDHIVPQSFLKDDSIDNK  
VLTRSDKNRGKSDNVPSEEVVKMKKNYWRQLLNAKLITQRKFDNLTKAERGGSEL  
DKAGFIKRQLVETRQITKHVAQILDSRMNTKYDENDKLIREVKVITLKSCLVSDFRKDF  
QFYKVVREINNYHHAHDAYLNAVVGTAIIKKYPKLESEFVYGDYKVYDVRKMIKSEQ  
EIGKATAKYFFYSNIMNFFKTEITLANGEIRKRPLIETNGETGEIVWDKGRDFATVRKV  
LSMPQVNIVKKTEVQTGGFSKESILPKRNSDKLIARKKDWDPKKYGGFDSPTVAYSV  
LVVAKVEKGKSKKLKSVKELLGITIMERSSFEKNPIDFLEAKGYKEVKKDLIIKLPKYSL  
FELENGRKRMLASAGELQKGNELALPSKYVNFLYLASHYEKLKGGSPEDNEQKQLFV  
EQHKHYLDEIIEQISEFSKRVLADANLDKVL SAYNKH RDKPIREQAENIIHLFTLTNLG

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APAAFKYFDTTIDRKRYTSTKEVLDTLIHQSI TGLYETRIDLSQLGGDGSPKKKRKVE  
 DPKKKRKVD TGSGKEELFTGVVPILVELDGDVNGHKFSVRGEGEGDATNGKLT LKFI  
 CTTGKL PVPWPTLVTTLT YGVQCFSRYPDHMKQH DFFKSAMPEGYVQERTISFKDD  
 GTYKTRAEVKFEGDTLVNRIELKGIDFKEDGNILGHKLEYNFN SHNVYITADKQKNGI  
 KANFKIRHNVEDG SVQLADHYQQNTPIGDGPVLLPDNH YLSTQSVLSKDPNEKRDH  
 MVLLEFVTAAGITHGMDELYK

**Purity** > 90 % by SDS-PAGE

**Storage** Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

**Concentration** 20 mg/mL by Bradford

**Storage Buffer** Sterile solution in 40mM Tris, pH 7.5, 580mM KCl, 2mM MgCl<sub>2</sub>, 2mM TCEP, 20 % Glycerol

## GENE INFORMATION

**Gene Name** [cas9 type II CRISPR RNA-guided endonuclease Cas9 \[ Streptococcus pyogenes \]](#)

**Official Symbol** [cas9](#)

**Synonyms** cas9; type II CRISPR RNA-guided endonuclease Cas9; csn1; type II CRISPR RNA-guided endonuclease Cas9; Cas9, originally named Csn1, is the large, multifunctional signature protein of type II CRISPR/Cas systems. It is well known even to general audiences because its RNA-guided endonuclease activity has made it a popular tool for custom editing of eukaryotic genomes.

**Gene ID** [69900935](#)

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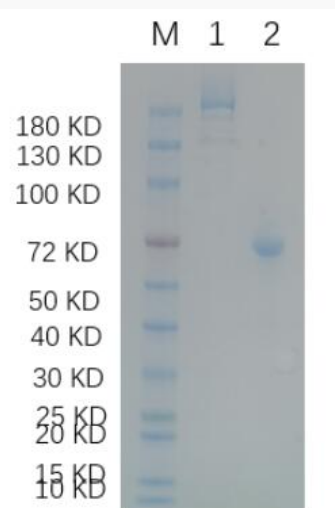
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Protein Refseq WP\_038431314

UniProt ID A0A0H3BZZ0

Reducing 12 % SDS-PAGE (CBB stained) analysis profiles of purified Cas9.



1. Cas9  
2. BSA

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