

## Recombinant Cas9 protein

**Catalog No:** 81067, 81767

**Lot No:** 30117001

**Expressed In:** *E. coli*

**Quantity:** 100, 1000 µg

**Concentration:** 0.3 µg/µl

**Source:** *S. pyogenes*

**Buffer Contents:** Recombinant Cas9 protein is supplied in 25mM Tris-HCl pH 8.0, 300 mM NaCl, 10% glycerol and 0.5 mM TCEP.

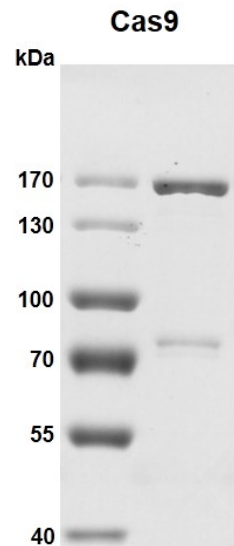
**Background:** Type II CRISPR (Clustered Regularly Interspersed Short Palindromic Repeats) RNA-guided endonuclease Cas9 (CRISPR associated protein 9) is an RNA-guided DNA endonuclease associated with adaptive immunity system in *Streptococcus pyogenes*, among other bacteria. *S. pyogenes* utilizes Cas9 to memorize and later interrogate and cleave foreign DNA, such as invading bacteriophage DNA or plasmid DNA. Cas9 performs this interrogation by unwinding foreign DNA and checking for sites complementary to the 20 basepair spacer region of the guide RNA. If the DNA substrate is complementary to the guide RNA, Cas9 cleaves the invading DNA. In this sense, the CRISPR-Cas9 mechanism has a number of parallels with the RNA interference (RNAi) mechanism in eukaryotes.

Apart from its original function in bacterial immunity, the Cas9 protein has been heavily utilized as a genome engineering tool to induce site-directed double strand breaks in DNA. These breaks can lead to gene inactivation or the introduction of heterologous genes through non-homologous end joining and homologous recombination respectively in many laboratory model organisms.

**Protein Details:** Recombinant Cas9 protein was expressed in *E. coli* as the full length protein (accession number WP\_010922251.1) with an N-terminal 6× His tag and a C-terminal nuclear localization sequence. The molecular weight of the protein is 161.2 kDa.

**Application Notes:** This protein is useful for the study of in *vitro* / in *vivo* DNA endonuclease reactions as well as other genome engineering.

**Storage and Guarantee:** Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



**Recombinant Cas9 protein gel**  
7.5% SDS-PAGE gel stained with Coomassie Blue.  
MW: 161.2 kDa  
Purity: > 85%