

Product Data Sheet

Product Name: Cas9 Protein, Streptococcus pyogenes M1 (sf9, NLS, His)
Cat. No.: GC27016
Batch No.: 1

Product Data

Purity >98%

Physical Appearance solid

Synonyms Cas9; endonuclease Cas9/Csn1; SpyCas9

Amino Acid Sequence MPAAKRVKLDMDKKYSIGLDIGTNSVGVAVITDEYKVPSSKFKVLGNTDRHSIKKNLIGALLFDSGETAEATRLKRTARRRYTRRKNRICYLQEIFSNEMAI

Formulation Supplied as a 0.22 µm filtered solution of 20 mM Tris, 300 mM NaCl, 20-50 % glycerol, pH 8.0, 0.5 mM PMSF, 0.1 mM EDTA, 0.5 mM

Introduction

The Cas9 protein is part of an immune system that defends against genetic elements. It processes RNA and aids in cleaving DNA targets. Protein and guide RNAs are necessary for its function. The protein recognizes specific sequences to distinguish self from nonself and provides immunity against matching genetic elements. Cas9 Protein, Streptococcus pyogenes M1 (sf9, NLS, His) is the recombinant Cas9 protein, expressed by Sf9 insect cells, with C-His labeled tag.

Biological Activity

- 1 µg = 5 U, 1 U is defined as cutting 1 µg 1 KB dsDNA in 30 min at 37°C.
- Cas9 Protein achieves ≥ 90% substrate cleavage measured by an in vitro DNA cleavage assay.

Stability

Stored at -80°C for 1 year from date of receipt. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.

Background

Cas9 protein is encoded by the *cas9* gene of *Streptococcus pyogenes* M1 (sf9, NLS, His) and is expressed in Sf9 insect cells with a C-His tag.

Cas9 protein cleaves DNA in the presence of crRNA and tracrRNA. crRNA is transcribed from the *cr* locus of the *Streptococcus pyogenes* M1 (sf9, NLS, His) genome. tracrRNA is transcribed from the *tracr* locus of the *Streptococcus pyogenes* M1 (sf9, NLS, His) genome. The crRNA and tracrRNA form a crRNA:tracrRNA complex that is loaded into the Cas9 protein. The crRNA:tracrRNA complex then cleaves DNA at a specific target site. The crRNA:tracrRNA complex is also used to generate a gRNA library for genome editing.

Caution: Product has not been fully validated for medical applications. For research use only.
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