

Recombinant Cas9 GMP-Grade

Catalog #GMP-CAS-EE109

Storage Condition -20C ± 5C for 18 months. Avoid repeated freeze/thaw cycles.

Form Liquid

Source E. Coli with CRISPR Cas9 gene of *S. pyogenes*

Synonyms CRISPR-associated endonuclease Cas9/ Csn1, cas9, SpCas9, SpyCas9

Storage Buffer 30 mM Tris-HCl, 0.3 M NaCl, 50% Glycerol, 0.1 mM EDTA, pH 7.4

Concentration 9.5-11.5mg/mL. The exact concentration is shown on the product label.

Product Contents

- Recombinant Cas9 Protein, GMP-Grade

Product Description

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 Cas9.

Applications

- Genome editing with CRISPR

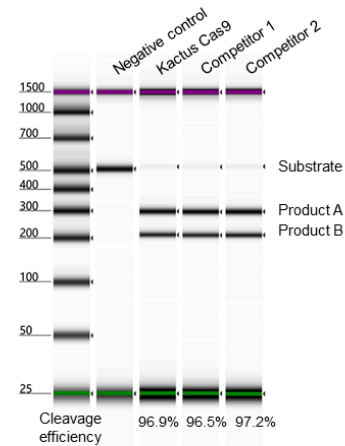
Quality Control Statement

KACTUS manufactures this product according to GMP guidelines and performs stringent quality control testing before release. The production is antibiotic- and animal-free. It is suitable for manufacturing of mRNA therapeutics and vaccines. Regulatory support documents are available. Please contact help@kactusbio.com for more information.

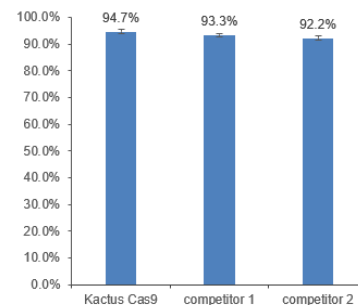
Quality Control Release Criteria

Assay	Criteria
Purity (Bis-Tris)	≥ 95%
Purity (RP-HPLC)	≥ 95%
Purity (SEC-HPLC)	Monomer ≥ 95.0%, Aggregates ≤ 5.0%
Purity(R-CE):	≥ 90.0%
Activity (<i>in vitro</i> cleavage)	≥ 85%
Endotoxin	≤ 10EU/mg
Residual DNase	Negative
Residual RNase	Negative
Residual Host Cell Protein	≤ 100ng/mL
Residual Host Cell DNA	≤ 3.0ng/mL
Sterility	No growth
Nickel Salt residue	≤ 10.0 ppm
Concentration	9.5-11.5mg/mL

Performance Validation



Cas9 cuts substrate DNA during *in vitro* cleavage reaction. Results show cleavage activity of KACTUS Cas9 is equivalent to that of leading competitors.



Cas9 is electrotransfected into 293T cells in the form of RNP to knock out the target gene. Results show KACTUS Cas9 has the same knockout efficiency as leading competitors.