

# Recombinant CRISPR Cas9 Protein, Research-Grade

## Catalog #CAS-EE109

**Storage Condition** -20°C ± 5°C for 24 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** 30mM Tris-HCl, 0.3M NaCl, 50% Glycerol, 0.1 mM EDTA, pH 7.4

**Concentration** 9.5-12.5mg/mL. The exact concentration is shown on the product label.

### Product Contents

- Recombinant Cas9 Protein,

### 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
- T-Cells, Stem Cells, etc.

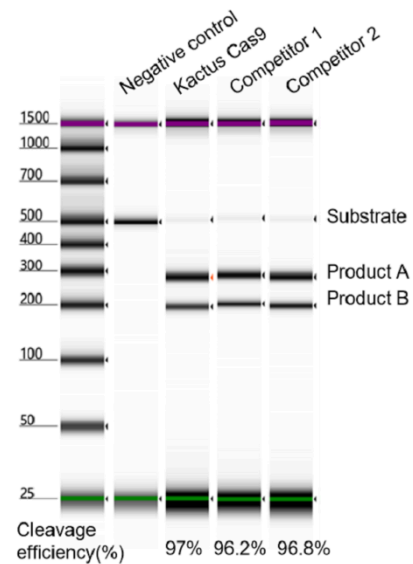
### Quality Control Statement

KACTUS manufactures this product and performs stringent quality control testing before release. The production is antibiotic- and animal-free.

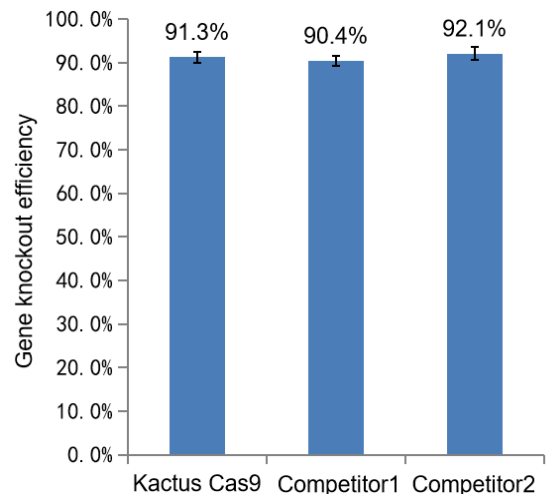
### Quality Control Release Criteria

Assay	Criteria
Purity (Bis-Tris)	≥ 95%
Purity (RP-HPLC)	≥ 95%
Purity (SEC-HPLC)	≥ 95%
Activity ( <i>in vitro</i> cleavage)	> 85%
Endotoxin	≤ 10EU/mg
Residual RNase	≤ LOD
Residual DNase	≤ LOD

### 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 used for gene knockout in 293T cell line. Results show KACTUS *Cas9* has the same knockout efficiency as leading competitors.