Synonym

CAS9

Endotoxin

Less than 0.01 EU per μg by the LAL method.

Host Cell Protein

≤ 10 ng/mg tested by ELISA.

Host Cell DNA

≤ 1ng/mg tested by qPCR.

Mycoplasma

Negative.

Sterility

The sterility testing was performed by membrane filtration method.

Purity

>95% as determined by SDS-PAGE.
≥95% as determined by SEC-MALS.

Concentration

10 mg/ml

Formulation

Supplied as 0.2 μm filtered solution in 20 mM Tris, 300 mM NaCl, 0.1 mM EDTA, pH7.5 with Glycerol as protectant.

Contact us for customized product form or formulation.

Shipping

This product is supplied and shipped with dry ice, please inquire the shipping cost.

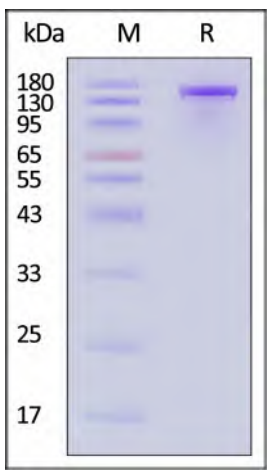
Storage

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

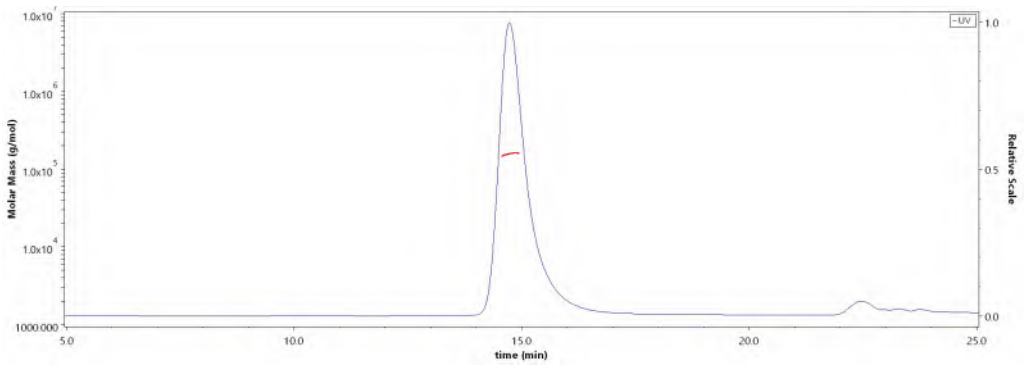
- The product MUST be stored at -20°C or lower upon receipt;
- -20°C for 18 months under sterile conditions.

SDS-PAGE



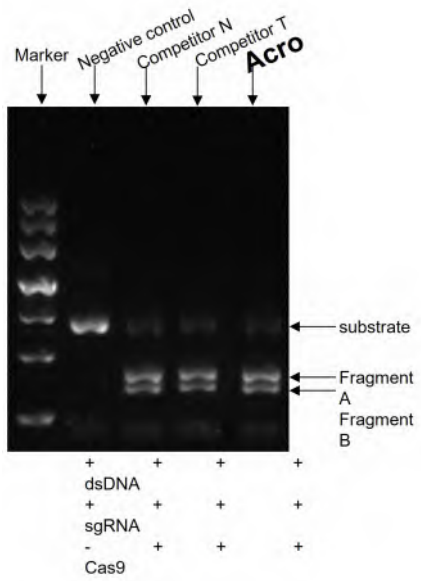
GENPower™ NLS-Cas9 Nuclease, premium grade on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The protein has a calculated MW of 162.4 KDa. The protein migrates as 145±5 kDa when calibrated against Star Ribbon Pre-stained Protein Marker under reducing (R) condition (SDS-PAGE).The purity of the protein is greater than 95%.

SEC-MALS

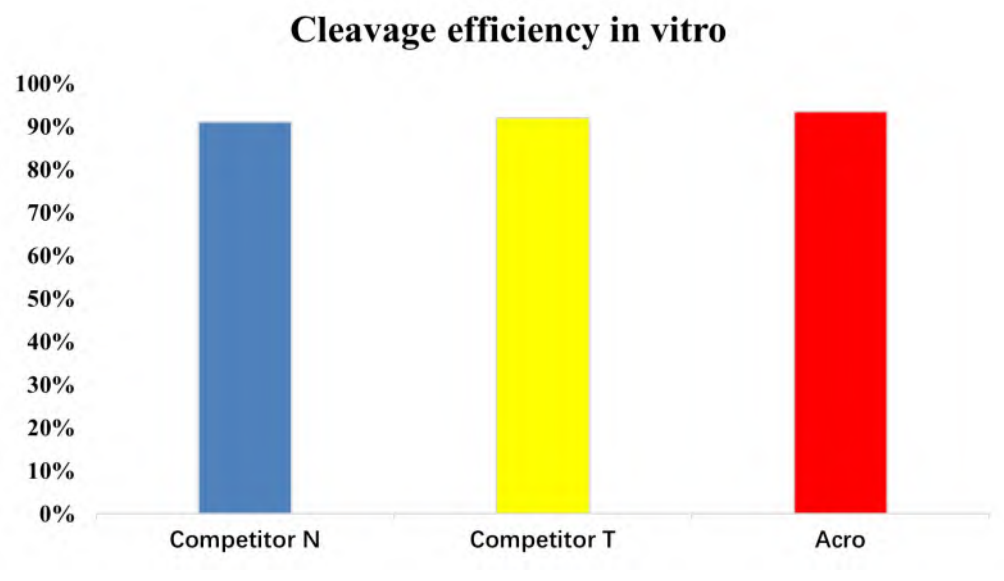


The purity of GENPower™ NLS-Cas9 Nuclease, premium grade (Cat. No. CA9-S5149) is more than 95% and the molecular weight of this protein is around 140-180 kDa verified by SEC-MALS.
Report

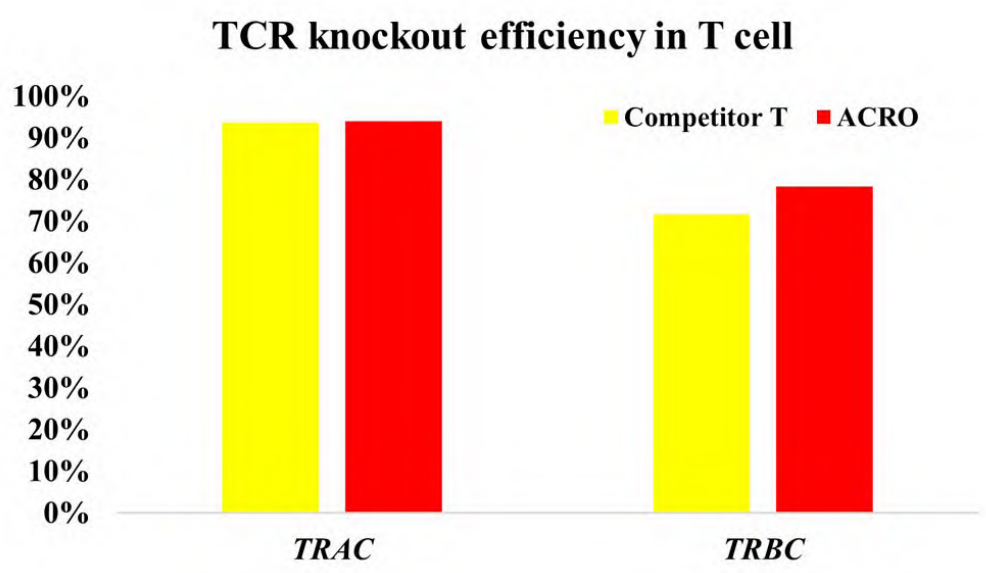
Bioactivity



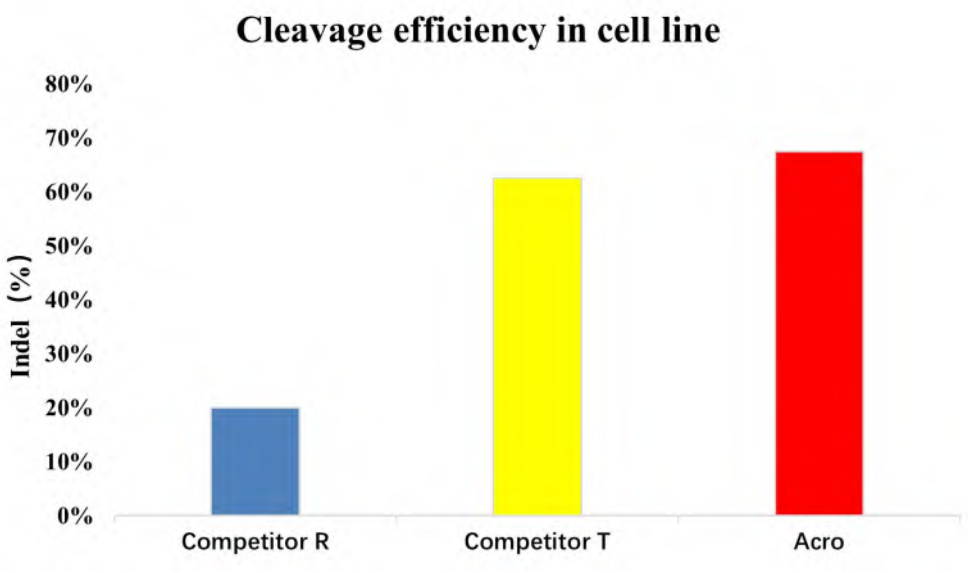
GENPower™ NLS-Cas9 Nuclease, premium grade is evaluated in an in vitro DNA cleavage assay on a DNA fragment containing the target sequence. The activity of the GENPower™ NLS-Cas9 Nuclease is greater than 90% (QC tested).



The cleavage activity of GENPower™ NLS-Cas9 Nuclease, premium grade in vitro.



The cleavage activity of GENPower™ NLS-Cas9 Nuclease, premium grade in human primary T cells.



The cleavage activity of GENPower™ NLS-Cas9 Nuclease, premium grade in cell line.

Background

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; Cas9 only stabilizes the pre-crRNA:tracrRNA interaction and has no catalytic function in RNA processing. 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). The target strand not complementary to crRNA is first cut endonucleolytically, then trimmed 3'-5' exonucleolytically. DNA-binding requires protein and both gRNAs, as does nuclease activity. 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. DNA strand separation and heteroduplex formation starts at PAM sites; PAM recognition is required for catalytic activity.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.