



Features

GENIUS™ Nuclease, premium grade is designed for preclinical stage, has more comprehensive QC testing (such as HCP and so on) and tighter specifications based on the following GENIUS features.

GENIUS™ Nuclease, premium grade has the same activity and performance with GMP Grade Nuclease, which enables a seamless transition from preclinical development to clinical phases. By using GENIUS™ Nuclease, premium grade in your development phase you can easily transit into clinical and commercial phases and avoid needing to amend your manufacturing process and undertake comparability studies.

- Generally usable: Generally usable for removing all forms of DNA and RNA from biological products, reducing viscosity and preventing cell clumping.
- Efficient: Efficient reaction, rapid degradation, reduce processing time.
- Native: Native structure, tag free, the enzyme activity is more guaranteed.
- Ideal: Ideal for DNA and RNA clearance
- Ultra pure: Ultra pure: High purity and activit
- Specific: Specific nuclease, no protease activity

Product Details

GENIUS™ Nuclease, premium grade is a tag-free recombinant form of Serratia marcescens extracellular endonuclease produced in Escherichia coli using a proprietary process at ACRObiosystems. GMP GENIUS™Nuclease performs optimally at low and physiological salt concentrations (0-200 mM NaCl). The product is a homodimer with monomer molecular masses of about 30 kDa. The enzyme is a non-specific nuclease with high specific activity, degrading single- and double-stranded nucleic acids in any form (single stranded, double stranded, linear, circular, and supercoiled). It hydrolyzes internal phosphodiester bonds present between the nucleotides to 5'- phosphorylated oligonucleotides of 3-5 bases in length.

Application

- Elimination of nucleic acids from biologics, suitable for samples with 0-200 mM salt in presence of 2-10 mM Mg++
- viral vaccine development process
 - viral vector development process for cell and gene therapy (CGT)
 - Other biologics development processes

Operating Conditions

GENIUS™ Nuclease, premium grade is functional between pH 6 and 10 (optimal at pH8 - 8.5) , and from 0°C to 42 °C (optimal at 35 °C - 42 °C). Mg2+ (1-2 mM) is required for enzyme activity.1 mM EDTA reduced the activity by 30% in the presence of 1 mM MgCl2; 0.1 M EDTA eliminated all enzyme activity. In the presence of 1 mM MgCl2, enzyme levels were reduced 75% by 0.1 M CaCl2 or 1 M NaCl. Under standard assay conditions, 1 mM iodoacetate had no effect on the enzymatic rate, whereas 1 mM mercaptoethanol and maleic acid reduced the activity by only 5 to 10%. 10 mM p- Chloromercurybenzoate completely inactivates the enzyme, while 0.64 M beta-mercaptoethanol in the

Enzyme Activity

≥250 U/μL

Host Cell Protein

<0.05 ng/μg of protein tested by ELISA.

Protease Activity

Negative.

Sterility

Negative

Mycoplasma

Negative

Endotoxin

Less than 0.01 EU per μg by the LAL method / rFC method.

Formulation

Supplied as 0.2 μm filtered solution in 20 mM Tris, 20 mM NaCl, 2 mM MgCl2, pH8.0 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

- This product is stable after storage at:
- The product MUST be stored at -20°C or lower upon receipt;
 - -20°C for 24 months under sterile conditions.



GENIUS™ Nuclease, premium grade

Catalog # NUE-S5119



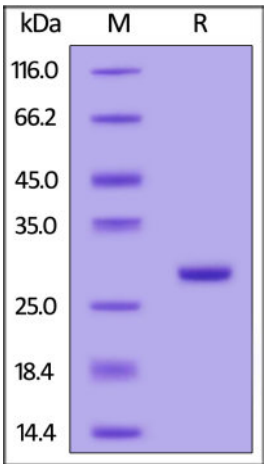
presence of 2 M urea causes only partial inactivation of the enzyme. 4 or 7 M Urea increases the enzyme activity.

Purity

>95% as determined by SDS-PAGE.

>99% as determined by SEC-HPLC.

SDS-PAGE

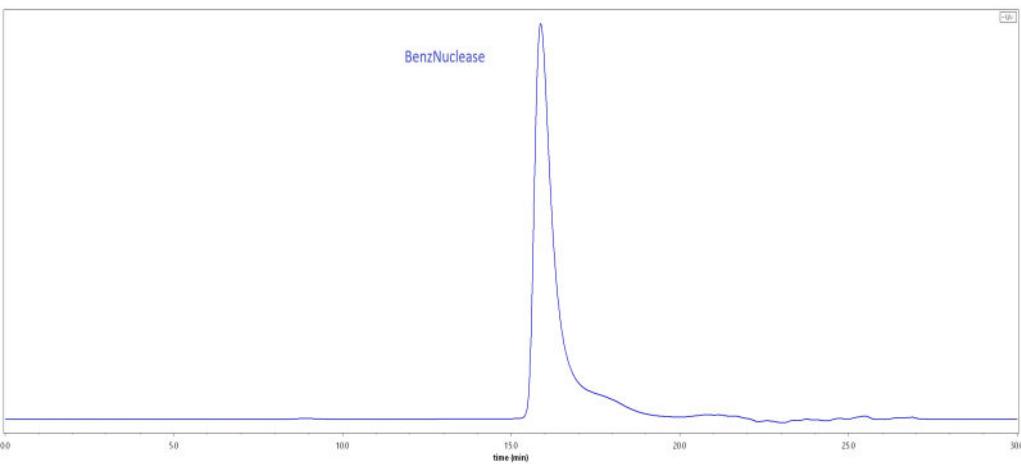


The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

Bioactivity

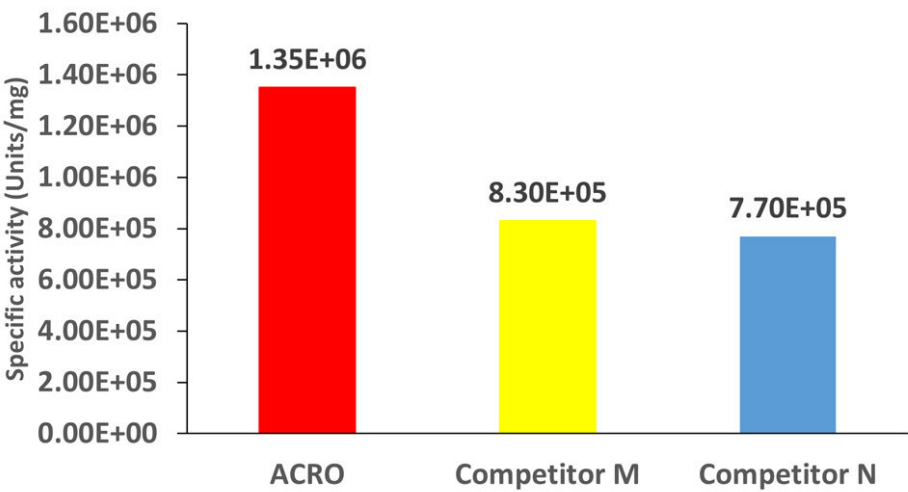
Specific activity for GENIUS™ Nuclease, premium grade is measured under standard assay conditions. The specific activity of GENIUS™ Nuclease, premium grade is > 1.2 x 10^6 units/mg protein (QC tested). One unit will digest sonicated salmon sperm DNA to acid-soluble oligonucleotides equivalent to a ΔA260 of 1.0 in 30 min at pH 8.0 at 37 °C, which corresponds approximately to complete digestion of 37 μg DNA. Note that 1 KU=1000 units.

SEC-HPLC



The purity of GENIUS™ Nuclease, premium grade (Cat. No. NUE-S5119) was greater than 99% as determined by SEC-HPLC.

Comparison of Specific activity



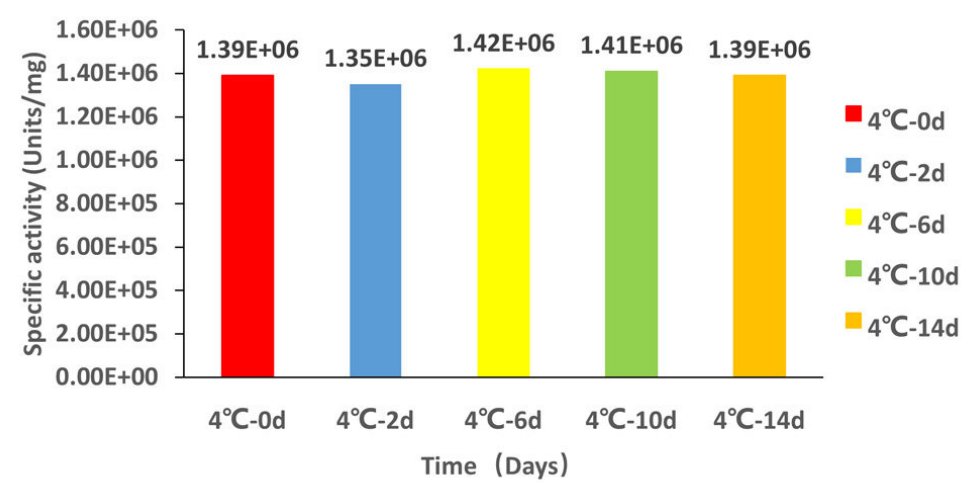
GENIUS™ Nuclease, premium grade shows high specific activity.

Bioactivity-Stability

Discounts, Gifts,
and more!

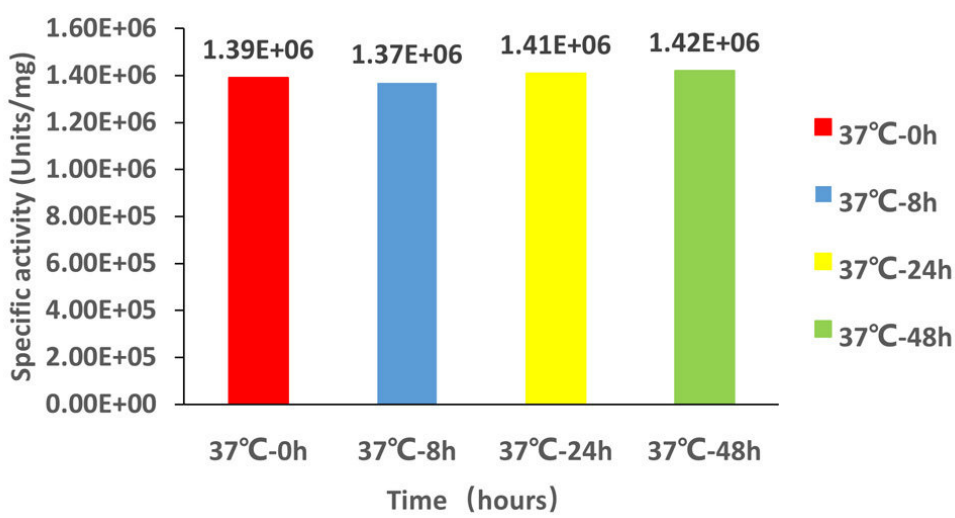


Stability at 4°C over time



The specific activity shows that GENIUS™ Nuclease, premium grade is stable at 4°C for 14 days.

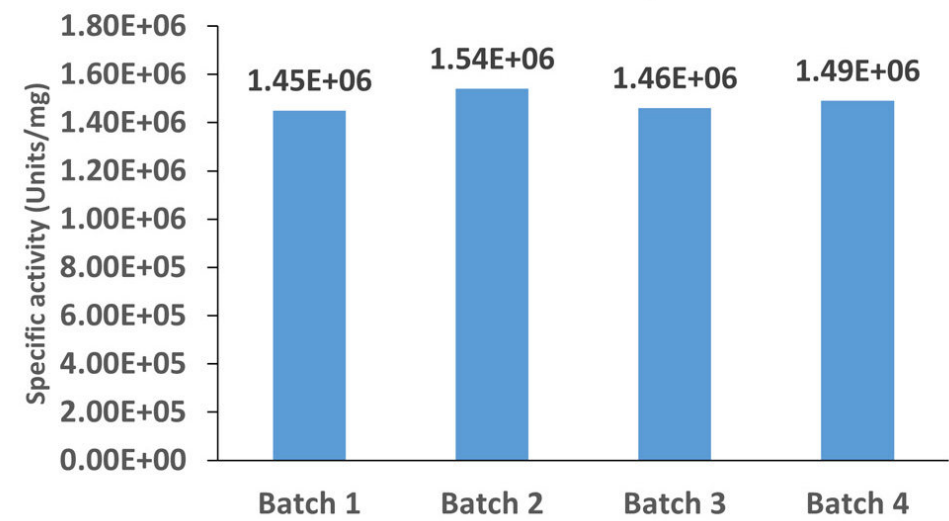
Stability at 37°C over time



The specific activity shows that GENIUS™ Nuclease, premium grade is stable at 37°C for 48 hours.

Batch Consistency

Batch consistency



Batch consistency at 37°C

