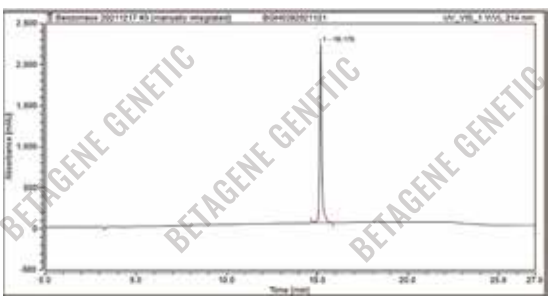
Recombinant Nuclease (ProNuclease) Tag-Free GMP

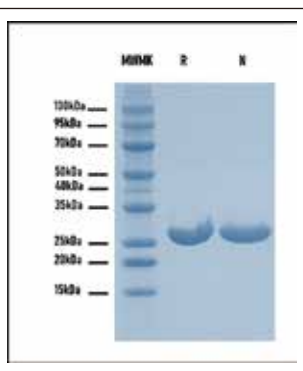
Physical Appearance	Sterile Filtered Clear Liquid
Description	ProNuclease is a non-specific endonuclease. It hydrolyzes internal phosphodiester bonds present between the nucleotides, all free nucleic acids present in solution are reduced to 5'-monophosphate terminated oligonucleotides which are 3 to 8 bases in length. ProNuclease attacks and degrades different types of DNA and RNA, whether single-stranded, double-stranded, linear, circular or supercoiled. ProNuclease is widely used in biological proteins purification.
Catalog Number	GA01.01/GA01.02/GA01.03/GA01.04
Specs	100kU/500kU/5mU/25mU
Source	E. coli
Molecular Weight	Approximately 26.8 kDa, a single non-glycosylated polypeptide chain containing 245 amino acids.
Purity (HPLC)	> 99%
Purity (SDS-PAGE)	> 99%
Biological Activity	≥ 250kU/mL (One unit (U) of ProNuclease is defined as the amount of enzyme that causes a change of 1.0 in A260 within 30 minutes, at 37 ℃, pH 8.0, 50mM Tris-HCl, 1mM MgCl2, 100 μg/mL BSA, and 1mg/mL sonicated salmon sperm DNA.)
Host Cell DNA	<0.02 ng/μg of protein tested by DNA Fluorescent Staining method.
Host Cell Protein	<0.5 ng/μg of protein tested by ELISA.
Formulation	20 mM Tris-HCl（pH 8.0）, 2 mM $MgCl_2$, 20 mM NaCl, and 50% glycerol
Sterility	Negative
Endotoxin	< 0.01 EU/kU as determined by TAL method
Mycoplasma	Negative
Stability & Storage	-20℃ over one year
Shipping	The product is shipped with wet ice. Upon receipt, store it immediately at the temperature recommended.

DATA



Bioactivity of ProNuclease GMP HPLC

HPLC analysis of ProNuclease GMP. The major peak corresponds to the calculated purity of >99%.



Bioactivity of ProNuclease GMP SDS-PAGE

2 μg/lane of ProNuclease was resolved with SDS-PAGE under reducing (R) and non-reducing (N) conditions and visualized by Coomassie® Blue staining, showing R and NR bands at 27kDa.

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Product	Cat. No.	Amount	Storage	Shelf life
Recombinant Nuclease (ProNuclease GMP-Grade)	GA01.01 GA01.02 GA01.03 GA01.04	100kU 500kU 5MU 25MU	≤-20℃	12 months

USAGE

Application amount
In order to reduce the viscosity, the amount of ProNuclease added must be determined according to the cell concentration of the solution. If the cell concentration is 50%, the recommended amount is 1/1000-1/200, or 500~2500 kU/L; if the cell concentration is 5%, the recommended amount is 1/10000-1/2000.

Add 500U of ProNuclease per 10^6-10^7 cells for cell lysate.

For adenovirus drugs or viral vaccines, adjust the amount according to the content of DNA.

Removal of ProNuclease
In order to reduce viscosity with no aseptic requirements, directly add ProNuclease and slowly stirred at room temperature for 30min.

For applications with aseptic requirements, it is recommended to dilute ProNuclease with a buffer of 20mM Tris (pH 8.0), 20mM NaCl and 2mM $MgCl_2$, and then use 0.2 μM after sterilization and filtration. Operate at room temperature for 30min.

Application cautions
1. The optimal reaction condition of ProNuclease is pH 8.0-9.2, 37 ° C, 30min. ProNuclease is still active beyond this range, but it is essential to extend the action time appropriately or increase the amount of ProNuclease applied;
2. Magnesium ion is necessary for ProNuclease bioactivity, and the recommended concentration is 2mM. If there is metal chelating agent such as EDTA in the sample, it has to be removed, or excess magnesium ion is needed to neutralize EDTA;
3. The activity of ProNuclease is relatively stable at room temperature for a short time. It must be stored in a refrigerator at -20℃ for longer term. ProNuclease will not freeze with 50% glycerine in store buffer.
4. Avoid repeated freezing and thawing and use the nuclease right after dilution.
5. If the solution contains high salt, detergent or denaturant of high concentration, or is slightly acidic or alkali, increase the amount of ProNuclease or extend the reaction time.

LIMITED WARRANTY

BETAGENE™ Genetic and/or its affiliate(s) warrant their products as set forth in the BETAGENE Genetic' General Terms and Conditions of Sale. If you have any questions, please contact our staff at SALES@betagene.com.

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