GMP Grade Restriction Enzymes XbaI

Cat#: 8052631

[Product Name]
GMP Grade Restriction Enzymes XbaI

[Model & Specification]

Product Name	Cat No.	Size	Component No.	Component Name	Component Size	Quantity
GMP Grade Restriction Enzymes XbaI	8052631	20000 units	8052631-1	GMP Grade Restriction Enzymes XbaI (20 units/μL)	20000 units	1 bottle
			8052631-2	10× Buffer (GMP Grade)	1 mL	6 bottle

[Product Description]
GMP Grade Restriction Enzymes XbaI is an enzyme obtained by recombinant expression in *E. coli* which can accurately digest target DNA within 15 minutes to 1 hour. This product adopts a product production and quality management system that complies with GMP specifications to ensure that the production process and raw and auxiliary materials are fully traceable. There are no antibiotics and any animal-derived raw materials and excipients in the entire production process. Process-related impurities such as host proteins, exogenous DNA, non-specific endonucleases, DNase, RNase, as well as microbial limits and bacterial endotoxins will be strictly controlled. This product can meet the requirements for raw materials and excipients in vaccine and drug production and other fields.

[Restriction Enzyme Site]
5'...T↓C T A G A...3'
3'...A G A T C↑T...5'

[Storage And Transportation]
Store at -25℃~-15℃ for 24 months.
Dry ice transportation.

[Activity Definition]
1 unit is defined as the amount of enzyme required to digest 1 μg of λDNA (Dam$^-$/HindIII digest) in 50 μL the reaction at the optimal reaction temperature in 60 minutes.

[Quality Control]
Protein Purity
The enzyme is ≥95% pure as determined by SDS-PAGE analysis using Coomassie Blue staining.
Non-Specific DNase Activity
The 20 units of GMP Grade Restriction Enzymes XbaI was tested for non-specific nuclease degradation in a reaction containing a DNA substrate. After incubation for 16 hours at the optimal reaction temperature, there was no detectable degradation of the DNA substrate as determined by agarose gel electrophoresis.
RNase Activity
The 20 units of GMP Grade Restriction Enzymes XbaI was tested in a reaction containing an RNA substrate. After incubation for 1 hour at the optimal reaction temperature, there was no detectable

degradation of the RNA substrate as determined by gel electrophoresis.

Heavy metal residue

The heavy metal residue in this product is ≤ 10 ppm.

Non-specific Endonuclease Activity

At the optimal reaction temperature, 20 units of GMP Grade Restriction Enzymes XbaI was incubated with a 20 μL reaction in 10× Buffer (GMP Grade) containing 200 ng of supercoiled plasmid DNA for 4 h, and the plasmid DNA was still supercoiled detected using agarose gel electrophoresis.

Prolonged Incubation / Star Activity Assay

At the optimal reaction temperature, 20 units of GMP Grade Restriction Enzymes XbaI was incubated with 1 μg of λDNA (Dam⁻/HindIII digest) for 16 hour. No other nuclease contamination or non-specific degradation of the substrate caused by asterisk activity was detected. Delayed enzyme Asterisk activity may occur.

Residual Host DNA

The enzyme was tested by TaqMan with primers specific for the *E.coli* 16S rDNA, and the results show that the *E.coli* genome residues less than 10 pg.

Residual Host Protein

The content of *E.coli* host protein detected by ELISA is less than 50 ppm.

Residual Endotoxin

The endotoxin residue of the product is less than 10 EU/mg.

Heavy metal residue

The heavy metals of the product is less than 10 ppm.

Mycoplasma

Using a Mycoplasma detection kit (LAMP method) to test the product and the result was negative.

[Method Of Application]

1. Protocol for DNA Digestion

① Combine the following reaction components on ice in the order indicated:

Components	Amount
DNA[a]	≤ 1 μg
10× Buffer (GMP Grade)	5 μL
GMP Grade Restriction Enzymes XbaI (20 units/μL)	20 units
ddH_2O	Up to 50 μL

a. The DNA substrate should not contain phenol, chloroform, ethanol, EDTA, detergent or high-concentration salt, otherwise it will affect the activity of XbaI enzyme;

② Gently mix or flick the tube wall to mix well (never vortex), then centrifuge instantaneously to collect reaction solution;

③ Incubate at 37℃ for 15 minutes~60 minutes ;

④ Inactivate the enzyme by heating for 20 minutes at 80℃.

[Precautions]

① The combined volume of the enzymes in the reaction mixture should not exceed 1/10 of the total reaction volume to avoid excessive glycerol in the enzyme causing star activity;

② The additives (such as glycerol, salt) in the enzyme storage buffer are the same as the contaminants (such as salt, EDTA, ethanol, etc.) in the substrate solution. Therefore, the smaller the reaction volume, the stronger the inhibitory effect of the enzyme cleavage reaction.

[Number Of Recognition Sites In DNA]

λDNA	ΦX174	pBR322	pUC57	pUC18/19	SV40	M13mp18/19	Adeno2
1	0	0	1	1	0	1	5

[Methylation Effects On Digestion]

Dam	Dcm	CpG	EcoKI	EcoBI
Blocked or impaired	No effect	No effect	No effect	No effect

[Icon Descriptions]

The enzyme's optimum reaction temperature is 37℃.

Cleavage with this restriction enzyme may be blocked or impaired when the substrate DNA is methylated by the Dam methylase.

Inactivate the enzyme by heating for 20 minutes at 80℃.

No star activity occurred following the recommended reaction conditions.

This enzyme does not contain animal-derived related components.

The production process complies with GMP specifications.

[Description Of Product Symbol]

Product Symbol	Description	Product Symbol	Description
REF	Catalog Number	LOT	Batch Code
	Date of Manufacture		Manufacturer
	Temperature limit		Use-by date
	Consult instructions for use		Keep away from sunlight

[Instruction Revision Date]

April 23, 2024

[Company Information]

Manufacturer and after-sales service unit Name: Shenzhen Dakewe Bio-engineering Co., Ltd.
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