MEBEP TECH(HK) Co., Limited
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BsaI, Animal free

Product Number: RE0327

Shipping and Storage

-70±10℃

Description

Restriction endonucleases, abbreviated as restriction enzymes, are a type of nucleic acid endonuclease that can recognize specific deoxyribonucleotide sequences and cleave the phosphodiester bond between two deoxyribonucleotides at specific positions in each strand. Restriction enzymes are an important component of the "restriction modification system", whose biological function is mainly to protect the host from infection by foreign DNA. They are widely used in various fields such as gene localization and cloning, gene structure research, DNA sequence analysis and determination, gene synthesis, etc. BsaI is derived from thermophilic Bacillus subtilis and is a commonly used restriction endonuclease.

This product is produced using recombinant protein production technology to obtain the restriction enzyme BsaI. It is produced using pharmaceutical grade raw materials and strictly controls host protein residues, nucleic acid residues, etc. It complies with GMP standards for product production and quality management regulations, ensuring traceability of the production process and all raw materials.

This product has completed the DMF filing with the US FDA.

Application

Molecular cloning; Genotyping; Southern hybridization; Restriction fragment length polymorphism (RFLP).

Quality control

Project	Specification
Appearance	Clear liquid
Visible foreign matter	Compliance
pH	7.0-8.0
Reactivity	10U/μL-10.5U/μL
Residual endonuclease	The degradation of substrates shall not exceed 10%
Residual exonuclease of nucleic acid	The degradation of substrates shall not exceed 10%
RNA enzyme residue	The degradation of substrates shall not exceed 10%
Bacterial endotoxin	< 1EU/mL
Heavy metal	≤ 10 ppm
Microbial limit	The total number of aerobic bacteria should not exceed 1cfu/10mL, and the total number of mold and yeast should not exceed 1cfu/10mL

Features

1. This product has strong specificity and can specifically cleave the DNA sequence it recognizes. The recognition sequence is as follows:

   5'...GGTCTC$(N)_1$↓... 3'

   3'...CCAGAG$(N)_5$↑... 5'

2. Methylation modification affects:

   Affected by CpG methylation and Dcm methylation, the sequences completely overlap and are cut off; Due to the influence of EcoBI methylation, the sequences completely overlap and splicing may be hindered;

   Not affected by Dam methylation, the sequence has no overlap, and splicing will not be hindered.

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Definition of Activity

Under the conditions of 50℃ and pH 7.0, complete digestion of 1μg of λ DNA within 1 hour is defined as 1 active unit.

Preservation system

20mM Tris-HCl; 500mM KCl; 1mM DTT; 0.1mM EDTA; 0.1% Triton X-100; 50% Glycerol; pH 7.0 at 25℃.

Common reaction system (50μL)

Components	50μL
10× BsaI Reaction Buffer, GMP Grade	5μL
Substrate DNA	1μg
BsaI, GMP Grade (10U/μL)	1μL
RNase Free Water	Up to 50μL

Incubate at 37℃ for 1-16 hours. The reaction time can be selected according to the experimental schedule. Enzyme digestion is fast and specific. If the reaction needs to be terminated, incubate at 80℃ for 20 minutes.

Produce according to the following specifications

1. ISO 9001:2015, certified facility.
2. GMP Appendix - Cell Therapy Products "by the National Medical Products Administration.
3. General Introduction to Human Gene Therapy - Chinese Pharmacopoeia 2020, National Pharmacopoeia Commission.
4. USP Chapter<1043>, Ancillary Materials for Cell, Gene, and Tissue Engineering Products are used as excipients in cell therapy, gene therapy, and tissue engineering products.
5. USP Chapter<92>, Growth Factors and Cytokines Used in Cell Therapy Manufacturing: Cytokines and Growth Factors in the Production Process of Cell Therapy Products.
6. Ph. Eur. General Chapter 5.2.12, Raw Materials of Biological Origin for the Production of Cell-based and Gene Therapy Medicinal Products Biogenic raw materials used for the production of cell or gene therapy drugs.

Note

1. BspQI may exhibit star activity under conditions of high glycerol concentration>5% or in systems with low salt ion concentration;
2. Minimize enzyme exposure to temperatures above -20℃ as much as possible.