



CERTIFICATE OF ANALYSIS

GsuI (Bpml)

#ER0461 100 u

Lot: Expiry Date:

5'... C T G G A G (N)₁₆ ↓...3'
3'... G A C C T C (N)₁₄ ↑...5'

Concentration: 5 u/μl
Source: *E.coli* that carries the cloned *gsuI* gene from *Gluconobacter suboxydans* H-15T
Supplied with: 1 ml of 10X Buffer B
1 ml of 10X Buffer Tango™

Store at -20°C



In total 3 vials.

BSA included: Lot# BSA62-313P



RECOMMENDATIONS

1X Buffer B (for 100% GsuI digestion)

10 mM Tris-HCl (pH 7.5), 10 mM MgCl₂, 0.1 mg/ml BSA.

Incubation temperature

30°C*.

Unit Definition

One unit is defined as the amount of GsuI required to digest 1 μg of lambda DNA in 1 hour at 30°C in 50 μl of recommended reaction buffer.

Dilution

Dilute with Dilution Buffer (#B19): 10 mM Tris-HCl (pH 7.4 at 25°C), 100 mM KCl, 1 mM EDTA, 1 mM DTT, 0.2 mg/ml BSA and 50% glycerol.

Double Digests

Tango™ Buffer is provided to simplify buffer selection for double digests. 98% of Fermentas Restriction Enzymes are active in a 1X or 2X concentration of Tango™ Buffer. Please refer to the Fermentas Catalog or go to www.fermentas.com/doubledigest to choose the best buffer for your experiments.

1X Tango™ Buffer:

33 mM Tris-acetate (pH 7.9), 10 mM magnesium acetate, 66 mM potassium acetate, 0.1 mg/ml BSA.

* Incubation at 37° results in 70% activity.

Storage Buffer

GsuI is supplied in: 10 mM potassium phosphate (pH 7.5 at 25°C), 7 mM 2-mercaptoethanol, 1 mM EDTA, 0.2 mg/ml BSA and 50% glycerol.

Recommended Protocol for Digestion

- Add:

nuclease-free water	16 µl
10X Buffer B	2 µl
DNA (0.5-1 µg/µl)	1 µl
GsuI	0.5-2 µl
- Mix gently and spin down for a few seconds.
- Incubate at 30°C for 1-16 hours.

The digestion reaction may be scaled either up or down.

Recommended Protocol for Digestion of PCR Products Directly after Amplification

- Add:

PCR reaction mixture	10 µl (~0.1-0.5 µg of DNA)
nuclease-free water	18 µl
10X Buffer B	2 µl
GsuI	1-2 µl
- Mix gently and spin down for a few seconds.
- Incubate at 30°C for 1-16 hours.

Thermal Inactivation

GsuI is inactivated by incubation at 65°C for 20 min.

ENZYME PROPERTIES

Enzyme Activity in Fermentas REase Buffers, %

B	G	O	R	Tango™	2X Tango™
100	50-100	20-50	20-50	100	50-100

Methylation Effects on Digestion

Dam: never overlaps – no effect.
Dcm: may overlap – blocked.
CpG: never overlaps – no effect.
EcoKI: never overlaps – no effect.
EcoBI: never overlaps – no effect.

Stability during Prolonged Incubation

A minimum of 1.0 unit of the enzyme is required for complete digestion of 1 µg of lambda DNA in 16 hours at 30°C.

Number of Recognition Sites in DNA

λ	ΦX174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
25	3	4	1	1	1	2

Note

GsuI requires only Mg²⁺ for its activity, but is stimulated by S-adenosylmethionine. 10 µM S-adenosylmethionine gives 2-fold increase of GsuI activity.

QUALITY CONTROL ASSAY DATA

Overdigestion Assay

No detectable change in the specific fragmentation pattern is observed after a 160-fold overdigestion with GsuI (10 u/μg lambda DNA x 16 hours).

Ligation/Recutting Assay

After a 10-fold overdigestion (0.6 u/μg DNA x 17 hours) with GsuI, approximately 90% of the digested DNA fragments can be ligated at a 5'-termini concentration of 0.08 μM. More than 90% of these sites can be recut.

Labeled Oligonucleotide (LO) Assay

No detectable degradation of single-stranded or double-stranded labeled oligonucleotides occurred during incubation with 10 units of GsuI for 4 hours.

Quality authorized by:



Jurgita Zilinskiene

PRODUCT USE LIMITATION.

This product is developed, designed and sold exclusively *for research purposes and in vitro use only*. The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals. Please refer to www.fermentas.com for Material Safety Data Sheet of the product.

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