

CERTIFICATE OF ANALYSIS

PvuII

#ER0633 HC, 12500 u

Lot: **Expiry Date:**

5'...**C A G↓C T G**...3'
3'...**G T C↑G A C**...5'

Concentration: 50 u/μl
Source: *Proteus vulgaris*
Supplied with: 2x1 ml of 10X Buffer G
1 ml of 10X Buffer Tango™

Store at -20°C



In total 4 vials.

BSA included: Lot# BSA62-313P

RECOMMENDATIONS

1X Buffer G (for 100% PvuII digestion)

10 mM Tris-HCl (pH 7.5), 10 mM MgCl₂, 50 mM NaCl,
0.1 mg/ml BSA.

Incubation temperature

37°C.

Unit Definition

One unit is defined as the amount of PvuII required to digest 1 μg of lambda DNA in 1 hour at 37°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.

Storage Buffer

PvuII is supplied in: 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.

Recommended Protocol for Digestion

- Add:

nuclease-free water	16 μ l
10X Buffer G	2 μ l
DNA (0.5-1 μ g/ μ l)	1 μ l
PvuII	0.5-2 μ l ^{a, b)}
- Mix gently and spin down for a few seconds.
- Incubate at 37°C for 1-16 hours^{b)}.

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 μ l (~0.1-0.5 μ g of DNA)
nuclease-free water	18 μ l
10X Buffer G	2 μ l
PvuII	1-2 μ l ^{a, b)}
- Mix gently and spin down for a few seconds.
- Incubate at 37°C for 1-16 hours^{b)}.

^{a)} This volume of the enzyme is recommended for preparations of standard concentrations (10 u/ μ l), whereas HC enzymes (50 u/ μ l) should be diluted with Dilution Buffer to obtain 10 u/ μ l concentration.

^{b)} See Star Activity.

Thermal Inactivation

PvuII is not inactivated by incubation at 80°C for 20 min.

Inactivation Procedure

- To prepare the digested DNA for electrophoresis:
 - stop the digestion reaction by adding 0.5 M EDTA, pH 8.0 (#R1021), to achieve a 20 mM final concentration. Mix thoroughly, add an electrophoresis loading dye and load onto gel.
- To prepare DNA suitable for further enzymatic reactions:
 - extract with phenol/chloroform, precipitate with ethanol or isopropanol, wash the pellet with 75% cold ethanol and air-dry;
 - dissolve DNA in either nuclease-free water, TE buffer, or a buffer suitable for further applications;
 - check the DNA concentration in the solution.

For **ENZYME PROPERTIES** and **QUALITY CONTROL ASSAY DATA**
see back page

ENZYME PROPERTIES

Enzyme Activity in Fermentas REase Buffers, %

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

*Star activity appears at a greater than 5-fold overdigestion (5 u x 1h).

Star Activity

An excess of PvuII (15 u/μg DNA x 1 hour) may result in star activity.

Methylation Effects on Digestion

Dam: never overlaps – no effect.

Dcm: never overlaps – no effect.

CpG: never overlaps – no effect.

EcoKI: never overlaps – no effect.

EcoBI: may overlap – not determined.

Stability during Prolonged Incubation

A minimum of 0.2 units of the enzyme is required for complete digestion of 1 μg of lambda DNA in 16 hours at 37°C.

Digestion of Agarose-embedded DNA

A minimum of 5 units of the enzyme is required for complete digestion of 1 μg of agarose-embedded lambda DNA in 16 hours.

Number of Recognition Sites in DNA

λ	ΦX174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
15	0	1	2	2	2	3

QUALITY CONTROL ASSAY DATA

Overdigestion Assay

No detectable change in the specific fragmentation pattern is observed after a 10-fold overdigestion with PvuII (10 u/μg lambda DNA x 1 hour) (see Star Activity).

Ligation/Recutting Assay

After a 10-fold overdigestion (5 u/μg DNA x 2 hours) with PvuII, more than 90% of the digested DNA fragments can be ligated at a 5'-termini concentration of 0.06 μM. More than 95% 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 PvuII for 4 hours.

Quality authorized by:  Laima Samaliene

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.