

CERTIFICATE OF ANALYSIS

KpnI

#ER0521 4000 u

Lot: Expiry Date:

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

Concentration: 10 u/μl
Source: *Klebsiella pneumoniae* OK8
Supplied with: 2x1 ml of 10X Buffer KpnI
 1 ml of 10X Buffer Tango™

Store at -20°C



In total 4 vials.

BSA included: Lot# BSA62-313P

RECOMMENDATIONS

1X Buffer KpnI (for 100% KpnI digestion)

10 mM Tris-HCl (pH 7.5), 10 mM MgCl₂,
0.02% Triton X-100, 0.1 mg/ml BSA.

Incubation temperature

37°C.

Unit Definition

One unit is defined as the amount of KpnI required to digest 1 μg of lambda DNA-BamHI fragments 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

KpnI is supplied in: 10 mM Tris-HCl (pH 7.5 at 25°C), 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.2 mg/ml BSA and 50% glycerol.

Recommended Protocol for Digestion

- Add:
 - nuclease-free water 16 μ l
 - 10X Buffer KpnI 2 μ l
 - DNA (0.5-1 μ g/ μ l) 1 μ l
 - KpnI 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 KpnI 2 μ l
 - KpnI 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 Note.

Thermal Inactivation

KpnI is inactivated by incubation at 80°C for 20 min.

ENZYME PROPERTIES

Enzyme Activity in Fermentas REase Buffers, %

KpnI	B	G	O	R	Tango™	2X Tango™
100	20-50	0-20	0-20	0-20	20-50	0-20

Methylation Effects on Digestion

Dam: never overlaps – no effect.

Dcm: may overlap – no effect.

CpG: may overlap – no effect.

EcoKI: never overlaps – no effect.

EcoBI: never overlaps – no effect.

Stability during Prolonged Incubation

A minimum of 0.2 units of the enzyme is required for complete digestion of 1 μ g 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 μ g of agarose-embedded lambda DNA in 16 hours.

Number of Recognition Sites in DNA

λ	Φ X174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
2	0	0	1	1	1	1

Note

A large excess of KpnI (10 u/ μ g DNA x 16 hours) may result in star activity.

QUALITY CONTROL ASSAY DATA

Overdigestion Assay

No detectable change in the specific fragmentation pattern is observed after a 80-fold overdigestion with KpnI (5 u/μg lambda DNA x 16 hours).

Ligation/Recutting Assay

After a 50-fold overdigestion (3 u/μg DNA x 17 hours) with KpnI, more than 95% of the digested DNA fragments can be ligated at a 5'-termini concentration of 0.02 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 KpnI for 4 hours.

Blue/White Cloning Assay

pUC57 was incubated with 10 units of KpnI for 5 hours. After religation and transformation, the background level of white colonies was 0.3%.

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.