

KpnI

5'-G G T A C C-3'
3'-C C A T G G-5'

Cat. No.	Size
E2280-01	3 000 units
E2280-02	15 000 units

Reaction Temperature: 37°C

Inactivation Temperature (20 min): --

Prototype: KpnI

Source: *Klebsiella pneumoniae* OK 8

Package Contents:

- **KpnI**
- **10x Reaction Buffer Low**
- **Dilution Buffer # 1**
Added for enzymes exceeding 10 U/μl in concentration. High protein concentration warrants optimal stability during prolonged storage. Use dilution buffer to prepare short term working stocks (5-10 U/μl, non-freezing at -20°C).

Storage Conditions: Store at -20°C

Double Digestion – Buffer Compatibility:

Buffer	% Rel. Activity
Low	100
Medium	50
High	<25
Acet	50

Double digestions: 100 μg/ml BSA neither inhibits nor promotes KpnI cleavage.

Recommended Buffer: Low
(or compatible third party buffers)

Restriction Enzyme Buffer Compatibility:
Both, enzyme and buffers are fully compatible to restrictases and buffer systems from other manufacturers and can be used along in double digestions. To obtain best results, consult the corresponding manuals of all involved products.

DNA Methylation:
No inhibition: dam, EcoKI
Potential inhibition: dcm, CpG

Standard Reaction Protocol:

Mix the following reaction components:
1-2 μg pure DNA or 10 μl PCR product (≈0.1-2 μg DNA)
5 μl 10x Buffer Low
1-2 U KpnI (use 1 U / μg DNA, < 10 % React. Volume!)
Tips: Add enzyme as last component. Mix components well before adding enzyme. After enzyme addition, mix gently by pipetting. Do not vortex. High (excess) amounts of enzyme can greatly speed up the reaction.
@ 50 μl H₂O, nuclease free

Incubate for 1 h at 37°C
To obtain complete digestion of high molecular weight DNA, (e.g. plant genomic DNA), add excess amounts of enzyme and prolong the incubation time.

Stop reaction by alternatively
(a) Addition of 2.1 μl EDTA pH 8.0 [0.5 M], final 20 mM *or*
(b) Heat Inactivation
(not applicable for this enzyme) *or*
(c) Spin Column DNA Purification
(e.g. EURx PCR/DNA CleanUp Kit, Cat.No. E3520) *or*
(d) Gel Electrophoresis and Single Band Excision
(e.g. EURx AgaroseOut DNA Kit, Cat.No. E3540) *or*
(e) Phenol-Chloroform Extraction or Ethanol Precipitation.

Non-optimal buffer conditions:

To compensate for the lack of enzyme activity, increase the amount of enzyme and / or reaction time accordingly. The following values may serve as orientation:

1. *Enzyme amount:* Instead of 1 U enzyme, use ~4 U of enzyme in buffers providing 25 % rel. activity, ~2 U in 50 %, ~1.5 U in 75 % or ~1 U in 100 %, respectively.
2. *Reaction time:* Increase by ~1.3-fold (75 % rel. activity), ~2-fold (50 %) or ~4-fold (25 %).

Unit Definition:

One unit is the amount of enzyme required to completely digest 1 μg of Ad-2 DNA in 1 hr in a total reaction volume of 50 μl. Enzyme activity was determined in the recommended reaction buffer.

Reaction Buffer:

1 x Low Buffer: 10 mM Tris-HCl (pH 7.0 at 37°C), 10 mM MgCl₂, 1 mM dithiothreitol.

Storage Buffer:

10 mM Tris-HCl (pH 7.5 at 22°C), 50 mM KCl, 0.1 mM EDTA, 1 mM dithiothreitol, 200 μg/ml bovine serum albumin and 50 % (v/v) glycerol.

Quality Control:

All preparations are assayed for contaminating endonuclease, 3'-exonuclease, 5'-exonuclease/5'-phosphatase, as well as non-specific single- and double-stranded DNase activities.