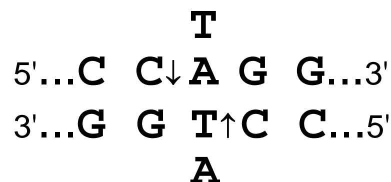
Fermentas
LIFE SCIENCES

CERTIFICATE OF ANALYSIS

MvaI (BstNI)

#ER0551 2000 u

Lot: **Expiry Date:**



Concentration:	10 u/µl
Source:	*E.coli* that carries the cloned *mvaIR* gene from *Micrococcus varians* RFL19
Supplied with:	1 ml of 10X Buffer R 1 ml of 10X Buffer Tango™

Store at -20°C

In total 3 vials. BSA included: Lot# BSA62-313P

ISO 9001 ISO 14001
www.fermentas.com

RECOMMENDATIONS

1X Buffer R (for 100% MvaI digestion)

10 mM Tris-HCl (pH 8.5), 10 mM $MgCl_2$, 100 mM KCl, 0.1 mg/ml BSA.

Incubation temperature

37°C.

Unit Definition

One unit is defined as the amount of MvaI required to digest 1 µg 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 at 37°C), 10 mM magnesium acetate, 66 mM potassium acetate, 0.1 mg/ml BSA.

Storage Buffer

MvaI is supplied in: 10 mM Tris-HCl (pH 7.5 at 25°C), 400 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 µl
10X Buffer R	2 µl
DNA (0.5-1 µg/µl)	1 µl
MvaI	0.5-2 µl*

- Mix gently and spin down for a few seconds.
- Incubate at 37°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 R	2 µl	
MvaI	1-2 µl*	

- Mix gently and spin down for a few seconds.
- Incubate at 37°C for 1-16 hours*.

* *See* Note on back page.

Thermal Inactivation

MvaI 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™
20-50	20-50	50-100	**100**	20-50**	100

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

Methylation Effects on Digestion

Dam: never overlaps – no effect.
Dcm: completely overlaps – no effect.
CpG: never overlaps – no effect.
EcoKI: never overlaps – no effect.
EcoBI: never overlaps – no effect.

Stability during Prolonged Incubation

A minimum of 0.1 units of the enzyme is required for complete digestion of 1 μg of lambda DNA in 16 hours at 37°C.

Compatible Ends

SatI, Bme1390I

Number of Recognition Sites in DNA

λ	ΦX174	pBR322	pUC57	pUC18/19	pTZ19R/U	M13mp18/19
70	2	6	5	5	5	7

Note

A large excess of MvaI (7.5 u/μg DNA x 16 hours) or low salt concentration may result in star activity.

QUALITY CONTROL ASSAY DATA

Overdigestion Assay

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

Ligation/Recutting Assay

After a 10-fold overdigestion (0.6 u/μg DNA x 17 hours) with MvaI, more than 90% of the digested DNA fragments can be ligated in a reaction mixture containing 20-40 u of T4 DNA ligase/1 μg of fragments and 10% PEG at a 5'-termini concentration of 0.6 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 MvaI for 4 hours.

Quality authorized by: Jurgita Zilinskiene

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Please refer to www.fermentas.com for Material Safety Data Sheet of the product.

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