FastGene®

Restriction Enzyme Sph I

II 37° 65°

Cat.#	Size	Conc.
FG-SphI	600 units	5 units/µl

Store at -20℃

Supplied with: 10X FastGene® Buffer II (FG-REB2)
10X FastGene® FastCut Buffer (FG-REBHF)
6X DNA Loading Buffer
Sterile water

Recognition site

For Research Use Only. Not for use in diagnostic procedures.

ISO9001

Source: *Streptomyces phaeochromogenes*

Reaction conditions
1X FastGene® Buffer II, 37℃
1X FastGene® FastCut Buffer, 37℃

FastGene® FastCut Buffer
FastGene® restriction enzyme can cut substrate DNA in 5-15 min with FastGene® FastCut Buffer

1X FastGene® Buffer II
10 mM Tris-HCl (pH 7.9 at 25℃)
50 mM NaCl
10 mM $MgCl_2$
100 µg/ml BSA

Unit definition
One unit is defined as the amount of enzyme required for complete digestion of 1 µg bacteriophage λ at 37℃ for 1 hr in 50 µl reaction mixtures.

Quality control
- Unit definition assay
- Overdigestion assay
- Endonuclease assay
- Extreme pure assay

Dilution buffer
FastGene® Diluent B

Heat Inactivation
Sph I can be inactivated at 65℃ for 20 min.

Methylation sensitivity
dam methylation: Not sensitive
dcm methylation: Not sensitive
CpG methylation: Not sensitive

Prolonged incubation
A minimum amount of enzyme required to digest 1µg substrate DNA for 16 hr; 0.13 U.

Relative activity in FastGene® Buffers

FastGene® Buffer I:	50%
FastGene® Buffer II:	100%
FastGene® Buffer III:	50%
FastGene® Buffer IV:	75%
FastGene® FastCut Buffer:	100%

Note
It produces a 3' CATG extension, which can be efficiently ligated to DNA fragments cleaved by Nla III. It is not affected by *dam*, *dcm*, or mammalian CpG methylation. Phenol extraction is not suitable to isolate Sph I-cleaved DNA fragments due to a tight association of Sph I with DNA. Low concentration of NaCl enhances aggregation.

Standard reaction condition
- Normal protocol

Component	Final Conc.	Volume
Substrate DNA	1 µg	X µl
10X FastGene® Buffer II	1 X	5 µl
Sph I	5 unit	1 µl
Sterile water		up to 50 µl

→ Incubate at 37℃ for 1 hr

- Fast protocol

Component	Final Conc.	Volume
Substrate DNA	1 µg	X µl
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Sph I	5 unit	1 µl
Sterile water		up to 50 µl

→ Incubate at 37℃ for 15 min

※ We recommend 5-10 units of enzyme per µg DNA and 10-20 units for genomic DNA in a 1 h digest.

NIPPON Genetics EUROPE GmbH
www.nippongenetics.eu
www.n-genetics.com

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5' ··· G C A T G C ··· 3'
3' ··· C G T A C G ··· 5'

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