SIGMA

ProductInformation

RESTRICTION ENDONUCLEASE Stu I

Product No. **R 8013**
Store at 0 to –20 °C

Product Summary
Recognition Sequence: 5'-AGG/CCT-3'
Activity: 10,000 units/ml
Cutting: 100%
Ligation: >90%
Recutting: >95%
No degradation detected with >20 units for 16 hrs.
Fold over digestion: 320 (20 units x 16 hrs.)
Package Size: 1,000 units

Unit Definition
One unit is the enzyme activity that completely cleaves
1 μg λ DNA in 1 hr. at 37 °C in a total volume of 25 μl of
SB restriction enzyme buffer.

Specificity
Stu I recognizes the sequence AGG/CCT and
generates fragments with blunt ends.[1] Stu I is inhibited
at AGG/^{m}C^{m}CT by the presence of 5'-methylcytosine.

Comments:
Digestion Buffer SB is supplied as a 10x concentrate.

Information is not available for heat inactivation of
Stu I.

Stu I Storage and Dilution Buffer Composition
20 mM Tris-HCl
100 mM NaCl
0.1 mM EDTA
10 mM 2-mercaptoethanol
0.01% Triton$^®$X-100
50% (v/v) glycerol
pH 7.5

1x Digestion Buffer SB (B 8781) Composition for Stu I: 100% Digestion at 37 °C.
10 mM Tris-HCl
100 mM NaCl
5 mM MgCl$_2$
1 mM 2-mercaptoethanol
pH 8.0

Quality Control Testing
Absence of non-specific endonuclease activities:
1 μg λDNA is incubated for 16 hours in 50 μl of buffer
SB with excess >20 units of Stu I.

Ligation and recutting assay: Stu I fragments,
obtained by complete digestion of 1μg λDNA, adjusted
to pH 7.5 at 20 °C. The Stu I fragments are then ligated
with 2.0 units T4-DNA ligase at room temperature at
pH 7.5. A 10 μl reaction mixture, incubated for
16 hours at pH 7.5 at room temperature, contained
2.0 units T4-DNA ligase, 66 mM Tris-HCl, 5 mM MgCl$_2$,
 1 mM dithioerythritol and 1 mM ATP.

The degree of ligation and subsequent recutting with
Stu I to yield the typical pattern of λ x Stu I fragments is
determined.

References
1.   Shimolsu, H., et al., Gene, **11**, 219 (1980)

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