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# ProductInformation

**RESTRICTION ENDONUCLEASE EcoR I**

Product No. **R 4640**
Store at 0 to –20 °C

**Product Summary**
Recognition Sequence: 5' G/AATTC''3
Activity: 40,000 units/ml
Cutting: 100%
Ligation: >95%
Recutting: >95%
No degradation detected with >100 units for 16 hrs.
Fold over digestion: 1,600 (100 units x 16 hrs.)
Package Size:1,000 units and 5,000 units

**Unit Definition**
One unit is the enzyme activity that completely cleaves 1 µg λDNA in 1 hr. at 37 °C in a total volume of 50 µl of Buffer SH for restriction enzymes.1 µg pBR322 DNA is digested completely by 2 units of Eco RI.

**Specificity**
Eco RI recognizes the sequence G/AATTC and generates fragments with 5'-cohesive termini.[1] Eco RI is an isoschizomer to Rsa I. Eco RI is inhibited by the presence of $N^6$-methlyadenine at either or both A residues in the sequence G/$^{m}$A$^{m}$ATTC.

**Comments**
Digestion Buffer SH is supplied as a 10x concentrate.

0.5-100 units of Eco RI is not heat inactivated after incubation at 65 °C for 15 min.

**Eco RI Storage and Dilution Buffer Composition**
10 mM Tris-HCl
200 mM NaCl
1.0 mM EDTA
0.5 mM dithioerythritol
0.2% Triton® X-100
50% (v/v) glycerol
pH 7.0

**1x Digestion Buffer SH (B 3657) Composition for Eco RI: 100% Digestion at 37 °C.**
50mM Tris-HCl
100 mM NaCl
10 mM $MgCl_2$
1 mM dithioerythritol
pH 7.5

**Quality Control Testing**
**Absence of unspecific endonuclease activities**:
1 µg λDNA is incubated for 16 hrs. in 50 ml buffer SH with >100 units of Eco RI.

**Ligation and Recutting Assay**
Eco RI fragments obtained by complete digestion of 1 µg λDNA are adjusted to pH 7.5 at 20 °C. The Eco RI fragments are then ligated with 0.1unit T4-DNA ligase at pH 7.5 at 4 °C. A 10 µl reaction mixture, incubated for 16 hrs. at 4 °C, contained: 0.1 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 Eco RI to yield the typical pattern of λxEcoRI fragments is determined.

**References**
1. Hedgpeth, J., et al., Proc. Natl. Acad. Sci USA, **69**, 3448 (1972).

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