

Pvu Rts1I Endonuclease

Cat. No. RTS11100

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1. Introduction

PvuRts1 I is an endonuclease that cleaves double-stranded (ds) DNA containing 5-hydroxymethylcytosines (5-hmC).¹ Under standard digestion conditions, the enzyme selectively cleaves DNA that contains the modified base on one or both strands. The consensus cleavage site of PvuRts1 I is 5-hmCN₁₁₋₁₂/N₉₋₁₀G.² Pvu Rts1I serves as a useful tool to analyze 5-hmC patterns within the genome. In addition to distinguishing between 5-mC and 5-hmC in ds DNA, the enzyme can also cleave both glucosylated and nonglucosylated 5-hmC ds DNA.

The enzyme is available in a 100-unit size at a concentration of 1 U/μl. The enzyme is supplied with a 10X Reaction Buffer.

2. Applications

- Differentiation of 5-hmC from 5-mC.
- Cleavage of DNA at glucosylated and nonglucosylated 5-hmC.

Usage notes: *The enzyme makes one cut in the recognition sequence generating a two-nucleotide 3' overhang cleavage pattern. The enzyme does not produce defined DNA ends upon cleavage. A careful monitoring of the enzyme's use during its application is recommended.*

3. Product Specifications

Storage: Store only at –20°C in a freezer without a defrost cycle.

Storage Buffer: 50% glycerol containing 50 mM Tris-HCl (pH 7.5), 0.1 M NaCl, 0.1 mM EDTA, 1 mM DTT, and 0.1% Triton® X-100.

Unit Definition: One unit is the amount of Pvu Rts1I needed for complete digestion of 1 μg of T2 gt⁻ DNA in 60 minutes at 30°C in 1X Reaction Buffer, in a 50-μl reaction.

Pvu Rts1I 10X Reaction Buffer: 330 mM Tris-acetate (pH 7.5), 660 mM potassium acetate, 100 mM magnesium acetate, and 5 mM DTT.

Contaminating Activity Assays: Pvu Rts1I Endonuclease is free of detectable nonspecific exonuclease, endonuclease, and RNase activities.

4. Example Reaction

Sterile water	variable
10X Reaction Buffer	5 μl
Sample DNA	variable
Pvu Rts1I enzyme (1 U/μl)	1 μl
Total volume	50 μl

Incubate at 30°C for 60 minutes.

5. References

1. Janosi, L. *et al.*, (1994) *J. Mol. Biol.* **242**, 45.
2. Szwajgierczak, A. *et al.*, (2011) *Nucleic Acids Res.* doi:10.1093/nar/gkr118.

6. Related Products

T4 Beta-glucosyltransferase

GT11500

500 Units

GT112500

2,500 Units

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