

QuickCut™ *Kpn* I



Code No.: 1618

Size: 200 μ l (200 reactions)

Supplied Reagents:

10X QuickCut Buffer 1.5 ml \times 1
10X QuickCut Green Buffer 1.5 ml \times 1

Description:

QuickCut restriction enzyme is a kind of enzyme which can quickly digest substrate DNA. The digestion activity of each QuickCut enzyme can reach 100% in the 10X QuickCut Buffer or 10X QuickCut Green Buffer, and the substrate DNA, such as plasmid DNA and PCR product, can be cut completely in 5 to 30 min. In addition, 10X QuickCut Buffer and 10X QuickCut Green Buffer are available for other enzymes also in QuickCut series. Then some kinds of the QuickCut enzymes can be reacted simultaneously in one reaction.

So QuickCut enzyme can lead easy operation, time saving, and elimination of the complex operation in restriction enzyme digestion.

Each QuickCut enzyme is supplied together with two kinds of universal buffer: 10X QuickCut Buffer and 10X QuickCut Green Buffer. 10X QuickCut Green Buffer contains composition of the sample loading buffer for agarose gel electrophoresis in 10X QuickCut Buffer, so the digested DNA can be used for electrophoresis directly. This buffer contains two tracking dyes and the migration speed of the blue dye is equivalent to that of 3–5 kb DNA fragment and the yellow dye is to 10 bp DNA fragment in 1% agarose gel.

Storage Buffer:

10 mM Tris-HCl, pH7.5
400 mM KCl
0.1 mM EDTA
1 mM DTT
0.01% BSA
0.15% TritonX-100
50% Glycerol

Storage: -20°C

Source:

Escherichia coli carrying the plasmid encoding *Kpn* I gene

Protocol:

1. Prepare reaction mixture in accordance with the table below:

	Linear DNA	Plasmid DNA	PCR product
10X QuickCut Buffer* or 10X QuickCut Green Buffer*	1 μ l–5 μ l	1 μ l–5 μ l	1 μ l–3 μ l
DNA	\leq 1 μ g	\leq 1 μ g	\leq 0.2 μ g
QuickCut <i>Kpn</i> I	1 μ l	1 μ l	1 μ l
Sterilized water	up to 10 μ l–50 μ l	up to 10 μ l–50 μ l	up to 10 μ l–30 μ l

*: With different reaction system, the amount of 10X Buffer is different. Please make sure the final concentration is 1X.

- Mix gently and centrifuge quickly.
- Incubate at 37°C for 5 min.

Activity Assay:

1 μ g of λ DNA could be completely digested after incubation of 1 μ l of QuickCut enzyme with 1X QuickCut Buffer or 1X QuickCut Green Buffer in 50 μ l of reaction mixture at 37°C for 5 min.

Quality Control:

- Functional Activity Test:**
1 μ g of linear DNA could be completely digested after incubation with 1 μ l of QuickCut enzyme in 50 μ l of reaction mixture at 37°C for 5 min.
- Star Activity Test:**
After incubation of 1 μ g of DNA with 1 μ l of QuickCut enzyme for 16 hours, no change of DNA bands pattern could be observed in agarose gel electrophoresis.
- Labeled Oligonucleotide Assay (LOA) Test:**
After incubation of oligonucleotide labeled with fluorescence with 1 μ l of QuickCut enzyme at 37°C for 1 hour, the decomposition rate should be less than 10%.

Effects of DNA methylation:

Enzyme activity is not affected by CG methylase.

Star Activity:

Unrelated site may often be cut in the presence of high concentration of glycerol, DMSO or Mn^{2+} , and at alkaline pH.

Note:

- To avoid star activity, the reaction time should be less than 16 hours.
- For double or multiple digestion, the amount of enzymes should not exceed 1/10 of the total reaction volume. If the reaction temperatures are different from each other, it is recommended that first, the lower temperature reaction should be performed with only specific enzyme which require lower temperature, and then add other enzyme which require higher temperature and perform second reaction.
- 10X QuickCut Green Buffer may interfere with the fluorescence analysis. So, in the case to perform the fluorescence analysis of the digested product, the use of 10X QuickCut Buffer is recommended.
- If precipitation appears in 10X QuickCut Green Buffer, dissolve completely by vortexing for 5 minutes at room temperature, which does not affect the quality.

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Note

This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals. Also, do not use this product as food, cosmetic, or household item, etc. Takara products may not be resold or transferred, modified for resale or transfer, or used to manufacture commercial products without written approval from Takara Bio Inc. If you require licenses for other use, please contact us by phone at +81 77 565 6972 or from our website at www.takara-bio.com. Your use of this product is also subject to compliance with any applicable licensing requirements described on the product web page. It is your responsibility to review, understand and adhere to any restrictions imposed by such statements. All trademarks are the property of their respective owners. Certain trademarks may not be registered in all jurisdictions.

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