

SangDye Terminator 3.1 Cycle Sequencing Kit

Overview

The SangDye Terminator v3.1 Cycle Sequencing Kit is used for performing Sanger sequencing on DNA samples. It is designed to provide high-quality sequencing data with high accuracy and minimal noise.

SangDye 3.1 Cycle Sequencing Kit is a direct replacement for Applied Biosystem's BigDye™ Terminator v3.1 Cycle Sequencing Kit. Current BigDye™ v3.1 users can switch to SangDye 3.1 seamlessly without changing current protocols. No new software or mobility shift file needs to be installed. No new calibration or validation is needed either.

The kit includes SangDye Terminator 3.1 sequencing mix, which contains a proprietary mixture of dideoxynucleotide terminators labeled with different fluorescent dyes. The mix also includes DNA polymerase, which extends the primer annealed to the DNA template and incorporates the fluorescently labeled dideoxynucleotide terminators, leading to chain termination and synthesis of DNA fragments of varying lengths.

The sequencing reaction is typically performed in a thermal cycler, which uses a series of temperature cycles to control the annealing and extension of the primers. After the reaction is complete, the products are purified and loaded onto a capillary electrophoresis instrument, such as the Applied Biosystems 3730x1 DNA Analyzer, which separates the fragments by size and detects the fluorescent signals.

SangDye Terminator 3.1 Cycle Sequencing Kit has the following features:

- ❑ High accuracy: The kit provides high-quality sequencing data with high accuracy and minimal noise, making it suitable for a wide range of applications, including de novo sequencing, variant detection, and genotyping.
- ❑ Wide range of applications: The kit can be used for sequencing various DNA templates, including PCR products, plasmids, BACs, and Fosmids.
- ❑ Easy to use: The kit is designed to be easy to use, with a simple reaction setup and standardized protocols.

SangDye 3.1 also brings many advantages over BigDye™ v3.1

- ❑ Faster reaction cycle: 3 min extension time, instead of 4 min is needed for SangDye 3.1, which can be further reduced to 2 min if needed.
- ❑ Higher dilution factor: As little as 0.15µl of SangDye can be used with success in a 5 µl total volume reaction (Fig. 1)
- ❑ Higher success rate: Especially for difficult templates (Fig. 2)

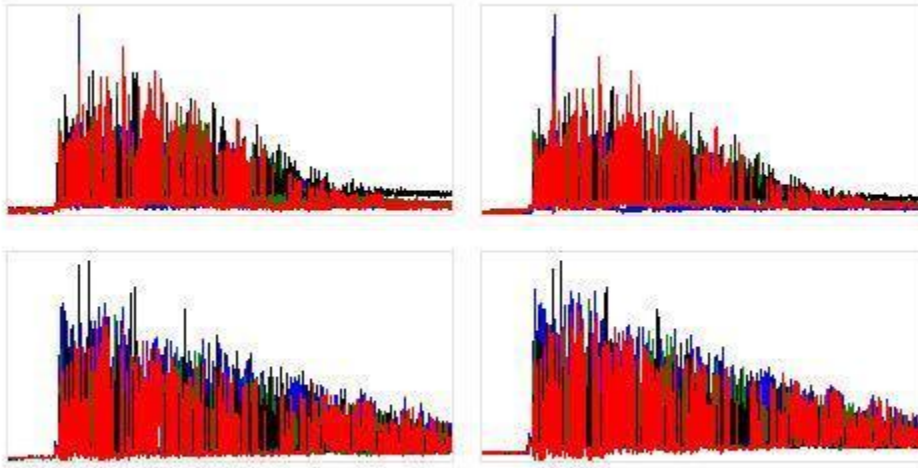


Fig. 1 Top panel: Raw sequencing signal of a normal template using 0.15 μ l BigDyeTM v3.1 in duplicate. Bottom panel: Raw sequencing signal of the same normal template using 0.15 μ l SangDye 3.1. Total reaction volume was 5 μ l.

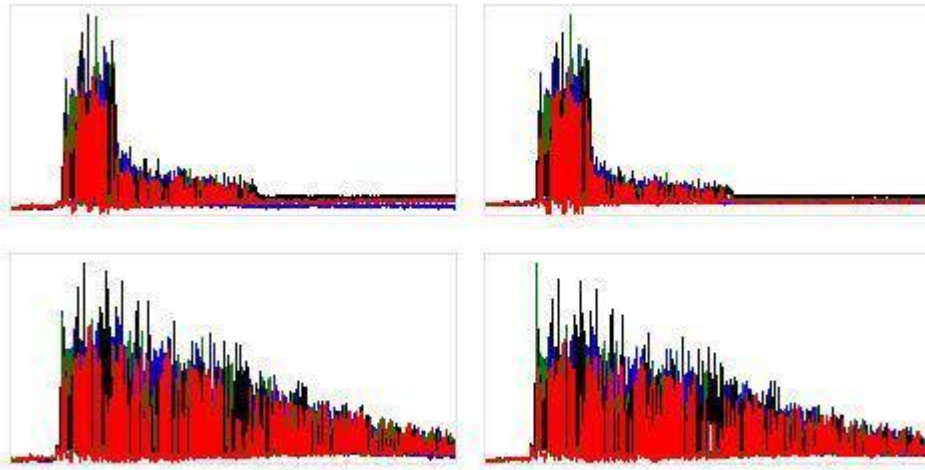


Fig. 2 Top panel: Raw sequencing signal of a GT rich template using 0.15 μ l BigDyeTM v3.1 in duplicate. Bottom panel: Raw sequencing signal of the same GT rich template using 0.15 μ l SangDye 3.1. Total reaction volume was 5 μ l.

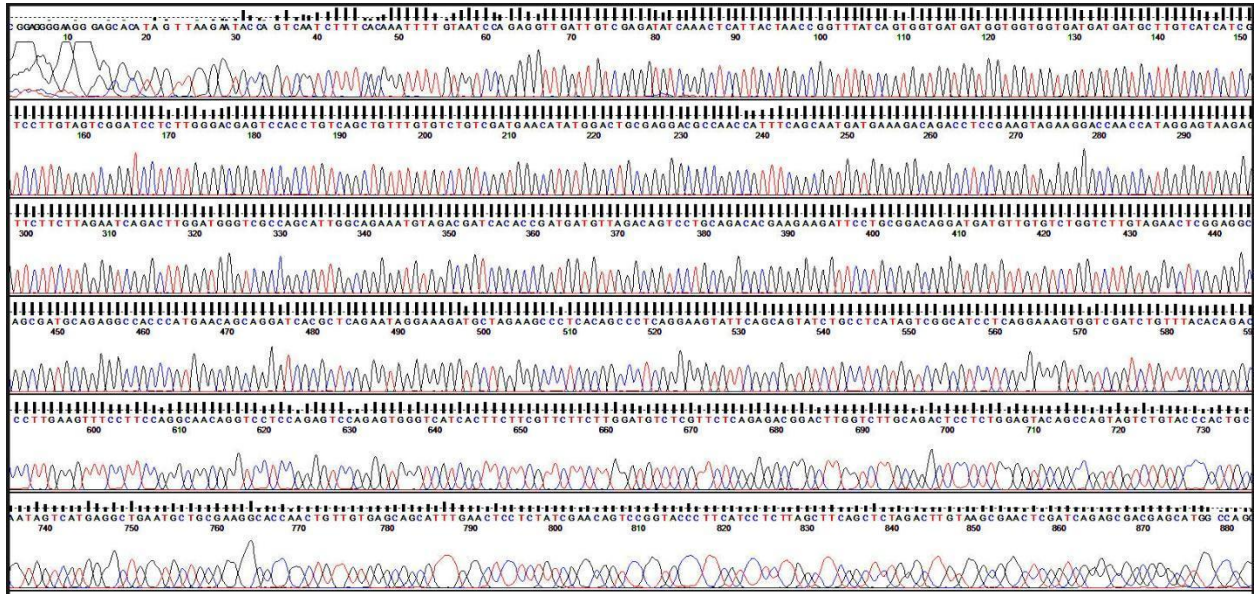


Fig3. DNA sequencing base call results using SangDye Terminator 3.1 Cycle Sequencing Kit run on ABI 3730XL DNA analyzer.