NZYTaq 2× GC-Enhancer Solution

Catalogue number:

MB14301, 1 mL
MB14302, 5 × 1 mL

Description

NZYTaq 2× GC-Enhancer Solution was specially developed to overcome difficulties in the polymerase chain reaction (PCR) amplification of GC-rich DNA templates using *Taq* DNA polymerase. The solution contains a proprietary formulation that has proven to be particularly useful when attempting to amplify highly GC-rich DNA sequences (GC% of 60-80%).

Storage conditions

NZYTaq 2× GC-Enhancer Solution should be stored at -20 °C, in a constant temperature freezer. It may be stored at 4 °C for up to 7 weeks. The solution will remain stable up to 3 years if stored as specified.

Protocol

1. Prepare a standard PCR reaction mixture following the protocol of NZYTaq II DNA polymerase (MB354) and include NZYTaq 2× GC-Enhancer Solution diluted 2× (e.g. add 25 µL to 50 µL reaction).

2. Perform PCR cycles protocol using standard parameters. Annealing temperature may need to be optimized for each primer set based on the primers T_m.

3. Separate the PCR products by agarose gel electrophoresis and visualize bands with GreenSafe Premium (MB13201) or any other mean.

Important notes

- NZYTaq 2× GC-Enhancer Solution can be used in PCR amplifications using Supreme NZYTaq II DNA polymerase (MB355). However, yield can be lower than for PCR using NZYTaq DNA polymerase.
- A mixture of NZYTaq 2× GC-Enhancer Solution and NZYTaq 5× Optimizer Solution (MB060) is possible to amplify GC-rich DNA templates when the presence of PCR inhibitors is suspected.

Quality control assays

Nuclease assays

To test for DNase activity, 0.2-0.3 µg of pNZY28 plasmid DNA are incubated with 1 µL of NZYTaq 2× GC-Enhancer Solution in a 15 µL reaction for 14-16 hours at 37 °C. Following incubation, the DNA is visualized in a GreenSafe-stained agarose gel. There must be no visible nicking or cutting of the DNA.

Functional assay

NZYTaq 2× GC-Enhancer Solution is tested for performance in a PCR assay using NZYTaq II DNA polymerase. Human genomic DNA is used as template to amplify fragments with high GC-content. The resulting PCR products are visualized as a single band in a GreenSafe Premium-stained agarose gel.

Data

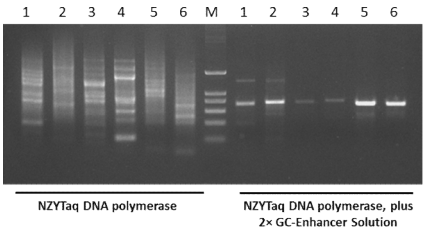

Figure 1. Agarose gel electrophoresis of PCR products generated with NZYTaq DNA polymerase. The six human genomic DNA sequences (1-6) have a GC content of 77.2%, 66.4%, 68.7%, 72.9%, 71.6% and 65.7%, respectively. Lane M: NZYDNA Ladder I (MB041).

V2401

For research use only.

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