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Data Article

Data of self-made Taq DNA polymerase prepared for screening purposes

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ABSTRACT

DNA analysis is a key procedure in genetic engineering. Nowadays the analysis is often done by PCR with Taq DNA polymerase. Although the last enzyme price is quite low, demand for numerous analyses results in much money expenditure which are not affordable for many laboratories. In a meanwhile, many screening tasks do not require the highly purified enzyme. Taking into account the enzyme unique properties it makes possible to marginally simplify its production without resorting to costly or lengthy techniques such as column chromatography and/or dialysis. Here the data of routine usage of Taq DNA polymerase prepared according to the protocol developed in our laboratory is presented. The protocol takes only several hours to realize and does not need qualified personnel or expensive equipment. Yet it gives the enzyme preparation suitable for most screening purposes. The isolated Taq DNA polymerase stock can be stored as ammonium sulfate suspension in a refrigerator for prolonged period, not less than 6 months. The working enzyme solution is prepared from the stock suspension on demand, not more than once in a month and can be stored also in a refrigerator.

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Specifications Table

Subject area	*Molecular biology*
More specific subject area	*Genetic engineering*
Type of data	*Text, figures*
How data was acquired	*SDS-polyacrylamide gel electrophoresis, agarose gel electrophoresis, Bio-Rad T100 thermal cycler*
Data format	*Raw, analyzed*
Experimental factors	*Taq polymerase stability, PCR analysis*
Experimental features	*Taq polymerase isolation, bacterial colonies screening*
Data source location	*Moscow, Russia*
Data accessibility	*The data is in this article*

Value of the data

- Simple protocol of self-made Taq DNA polymerase production and usage.
- Convenient way of the self-made enzyme storage in a refrigerator without freezing.
- The data of the self-made enzyme stability during long-term storage in a refrigerator.
- The data of PCR analyses with the self-made enzyme for many samples.
- Significant reduction of PCR analyses expenses.

1. Data

The Taq DNA polymerase was isolated as described in [1] with some modifications making the purification protocol simpler and more convenient. First, the recombinant strain biomass was obtained by inoculation of auto-induction medium with bacterial colonies from agar plate [2]. Second, the isolated Taq DNA polymerase stock was stored as ammonium sulfate (AS) suspension in a refrigerator (at 4–6 °C) – not less than 6 months. The working enzyme solution was prepared in small portions, as required, by AS suspension centrifugation and the precipitate solubilization in a standard 1 × Taq buffer. The working enzyme solution was stored in a refrigerator (at 4–6 °C) not less than a month. On Fig. 1 there is data of the Taq DNA polymerase activity in the AS suspension fractions. The

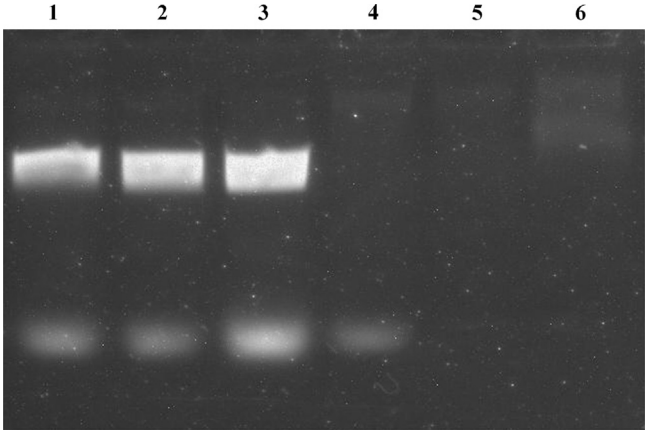

Fig. 1. Analysis of Taq DNA polymerase activity in the enzyme stock fractions: (1–3) the PCR reactions with 0.5 μl, 1 μl and 2 μl of the working enzyme solution, (4–6) the PCR reaction with 0.5 μl, 1 μl and 2 μl of the AS suspension supernatant.