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In devel.

E. coli K12 DNA Extraction

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ABSTRACT

How to extract DNA from *E. coli* K12 using Wizard® Genomic DNA Purification Kit by Promega®.

I do not claim any credit for the development of this protocol. It has been adapted from the protocol detailed in:

Wizard Genomic DNA Purification.pdf .

PROTOCOL STATUS

In development

We are still developing and optimizing this protocol

MATERIALS

NAME	CATALOG #	VENDOR
Wizard(R) Genomic DNA Purification Kit	A1620	Promega

MATERIALS TEXT

Additional materials:

- 1.5 mL microcentrifuge tubes
- Isopropanol, room temperature
- 70% ethanol, room temperature

Culture bacteria

1 Culture *E. coli* K12 in BHI broth overnight.

2 mg lyophilized *E. coli* K12 in 10 ml BHI broth.

Pellet the cells

2 Add 1 ml cell suspension to 1.5 mL microcentrifuge tube.

3 Centrifuge at 13,000-16,000 × *g* for 00:02:00 .

4 Remove supernatant.

Lyse nuclei

5 Add 600 µl of Nuclei Lysis Solution.

6 Gently pipet until the cells are resuspended.

7 Incubate at 80 °C for 00:05:00 to lyse the cells.

8 Cool to room temperature.

Degrade RNA

9 Add 600 µl RNase Solution to the cell lysate.

10 Invert 2-5 times to mix.

11 Incubate at 37 °C for 00:15:00 to 01:00:00 .

12 Cool to room temperature.

Precipitate proteins

13 Add 200 µl of Protein Precipitation Solution to the RNase-treated cell lysate.

14 Vortex vigorously at high speed for 00:00:20 .

15 Incubate on ice for 00:05:00

16 Centrifuge at 13,000-16,000 × *g* for 00:03:00 .

Harvest DNA

17 Transfer the supernatant containing the DNA to a clean 1.5 mL microcentrifuge tube containing 600 µl isopropanol.

Some supernatant may remain in the original tube conatining the protein pellet. Leave this residual to avoid contaminating the DNA solution with the precipitated protein.

18 Gently mix by inversion until the thread-like strands of DNA form a visible mass.

Wash and dry DNA

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19 Centrifuge at 13,000-16,000 × *g* for **00:02:00** .

20 Carefully pour off the supernatant and drain the tube on clean absorbent paper.

21 Add **600 µl** of 70% ethanol and gently invert the tube several times to wash the DNA pellet.

22 Centrifuge at 13,000-16,000 × *g* for **00:02:00** .

23 Carefully aspirate the ethanol.

24 Drain the tube on clean absorbent paper and allow to air-dry for 10-15 minutes.

Rehydrate DNA

25 Add **100 µl** of DNA rehydration solution to the tube.

26 Rehydrate by incubating the solution overnight at room temperature or **4 °C** .

27 Store DNA at **2 °C** to **8 °C** .