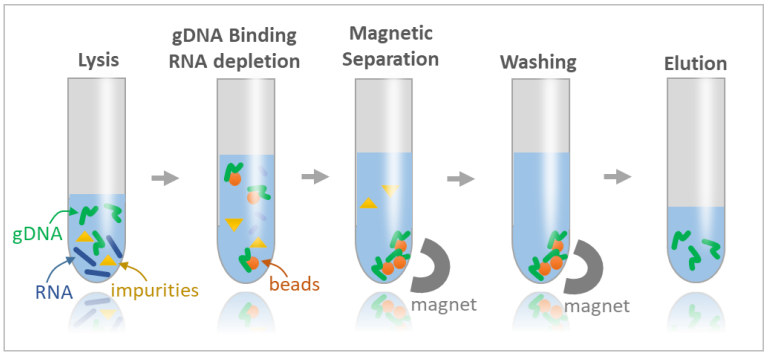
Bacterial DNA Extraction Kit (Magnetic Beads)

Catalog No.	50013S	50013L
Preps	50 preps	200 preps

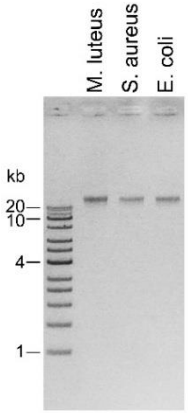
Description

The **Bacterial DNA Extraction Kit (Magnetic Beads)** was developed for the bacterial genomic DNA extraction from bacterial cultures directly using magnetic beads from a wide variety of gram-negative and gram-positive bacterial species, as well as yeast and other fungi. With our proprietary magnetic beads technology, the kit eliminates the tedious centrifuge steps for columns. The kit provides a reliable and simple approach for high-quality bacterial DNA isolation with fast magnetic response time and high binding capacity.



Bacteria are the most diverse and abundant small single-celled organisms and are vital to the planet's ecosystems. Some bacterial species are pathogens that can cause a variety of diseases to humans and animals. Besides their ecological and biomedical importance, bacteria are also used in biotech and pharmaceutical applications such as production of enzymes, DNA preparation, biofuels, food research, and chemical production.

Bacterial cells are grown to log-phase and the culture is lysed directly with a lysis buffer, then mixed with beads to bind genomic DNA. After wash steps, genomic DNA is eluted in Low TE or TE Buffer. The isolated genomic DNA with the magnetic beads is free of contamination such as RNA, proteins, salts, and other impurities. Bacterial DNA extracted using the kit is suitable for downstream applications such as qPCR, PCR, DNA sequencing, Southern Blotting, molecular cloning, DNA hybridization, restriction enzymatic digestion, and Next-generation Sequencing (NGS) etc.



Purified genomic DNA from various bacteria were isolated. A portion of the extracted genomic DNA was loaded on a 1% agarose gel. DNA ladder: BioDynami 1 kb Plus DNA Ladder (Cat.# 10005L).

Features

- 100% centrifuge-free
  - Bacterial cultures can be used directly without centrifuge to pellet the bacteria
- Simple
  - No centrifuge needed
  - No column needed
  - No vacuum needed

	Specifications
Technology	Magnetic beads
Starting volume	150 µl (up to 450 ul possible)
Starting material	Gram-positive; gram-negative; yeast; fungi
Elution volume	100 µl
O.D. 260/280	1.8-2.0
O.D. 260/230	Above 2.0

Component

Catalog No.	50013S	50013L
RNase	0.4 ml	1.6 ml
Lysis Buffer	12.5 ml	50 ml
BG Beads	8 ml	32 ml
Elution Buffer	5 ml	20 ml

Storage Condition

- Store BG Beads and RNase at 4°C, stable up to 12 months.
- Store Lysis Buffer and Elution Buffer at room temperature, stable up to 12 months.

Reagent & Equipment Needed (not provided in this kit)

- Magnetic particle concentrator
- Vortexer
- 1.5 ml or 2.0 ml tubes
- 80% isopropanol (prepare before use)
- 80% ethanol (prepare before use)

Protocol

Note: Resuspend BG beads completely before use.

1. Add 8 µl of RNase to the tube containing 150 µl of bacteria culture.
2. Add 250 µl of the Lysis Buffer and mix by inverting the tube several times. Incubate for 4 min.
3. Add 160 µl of the BG Beads, mix by inverting the tube several times and put the tube on a magnet rack immediately. Incubate for 4 min and discard the supernatant.
4. Remove samples from the magnet, add 900 µl of 80% isopropanol and resuspend the beads by scratching/pipetting up and down using pipette tips.
5. Put samples on the magnet and discard the supernatant.
6. Remove samples from the magnet, add 900 µl of 80% ethanol, mix by vortexing 20 sec. Discard supernatant completely.
7. Remove samples from the magnet, add 900 µl of 80% ethanol, mix by vortexing 20 sec. Transfer solution (including beads) to new tubes.
8. Put samples on the magnet and discard the supernatant. Remove any residue solution using a pipette with fine tips.
9. Add 100 µl of Elution Buffer, mix by vortexing 20 sec.
10. Put the samples on the magnet and transfer the supernatant (containing DNA) to new tubes.

Troubleshooting

Low DNA concentration

1. It is best to use bacterial cultures just before they reach maximum density. Do not undergrow or overgrown the cultures.
2. Resuspend BG beads completely before use.
3. Mix completely after adding the Lysis Buffer. The solution should become clear.
4. Mix completely after adding the BG Beads. The BG Beads is viscous and make sure it is completely mixed with lysed samples.
5. Make sure all beads are resuspended in the Elution Buffer.

RNA contamination

1. Extend incubation time from step 2 to 5-10 min.
2. Extend incubation time from step 3 to 5-10 min.

Low O.D. 260/230

1. Discard supernatant completely when washing (step 5 and 6).
2. Remove any residue solution using a pipette with fine tips at step 8.

Quality Control

Kit components passed stringent functional quality test.

Product Use Limitation

This product is developed and sold for research purposes and *in vitro* use only. Please refer to biodynami.com for Material Safety Data Sheet of the product.

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