

High-throughput, Automated Plasmid Purification from up to 1.5 mL Bacterial Cultures

Extract plasmid DNA from bacterial pellets in approximately 95 minutes with no manual intervention.

Kit

Mag-Bind® Endo-free Plasmid Mini Kit (M1261)

Sample Type

Escherichia coli DH5α cultures harboring pGEM plasmid grown overnight in LB medium at 37°C

Sample Amount

1 mL

Analysis

NanoDrop™ 2000c Spectrophotometer

Materials

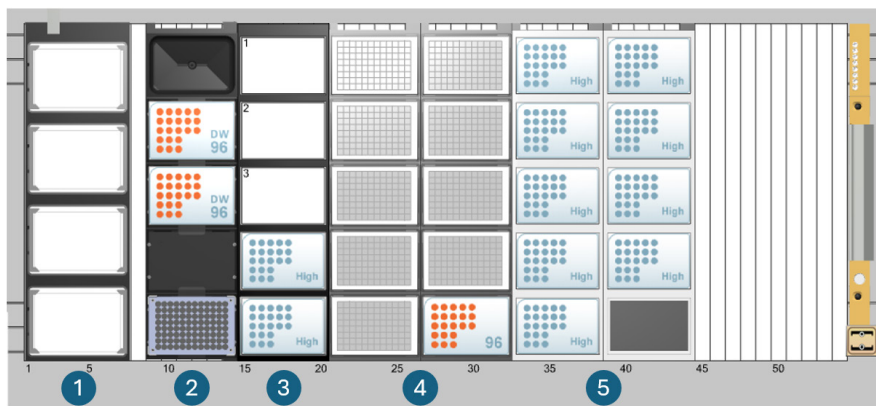
Mag-Bind® Endo-free Plasmid Mini Kit (M1261)
Mag-Bind® Particles LC (MBPLC-05)
Hamilton Microlab® STAR™

For a complete list of System components and Plastic Consumables on Hamilton Microlab® STAR™, please contact us at automation@omegabiotek.com

Methods

Automated method developed by Omega Bio-tek for the Hamilton Microlab® STAR™

Hamilton Microlab® STAR™ Deck Layout



Components	Purpose
1. HHS Baseplate with 4x HHS units (3 mm orbital with flat bottom adaptors).	Heater/Shakers for bead resuspension and incubation steps.
2. MFX Carrier with 4x tall labware locators & liquid waste module for MPH.	For processing plate positions, magnet (Alpaqua Magnum FLX) & liquid waste module.
3. Tip Isolator Carrier	For tips reused for tip mixing and liquid waste removal steps.
4. 2x DWP Stands	For processing plate positions, reagent reservoirs, and elution plate.
5. 2x Standard Tip Carriers	Tips for reagent dispensers.

Figure 1. Hamilton Microlab® STAR™ deck layout for automated Plasmid DNA extraction from 1 mL bacterial cultures.

Convenient Lysate Clearance Using Magnetic Beads

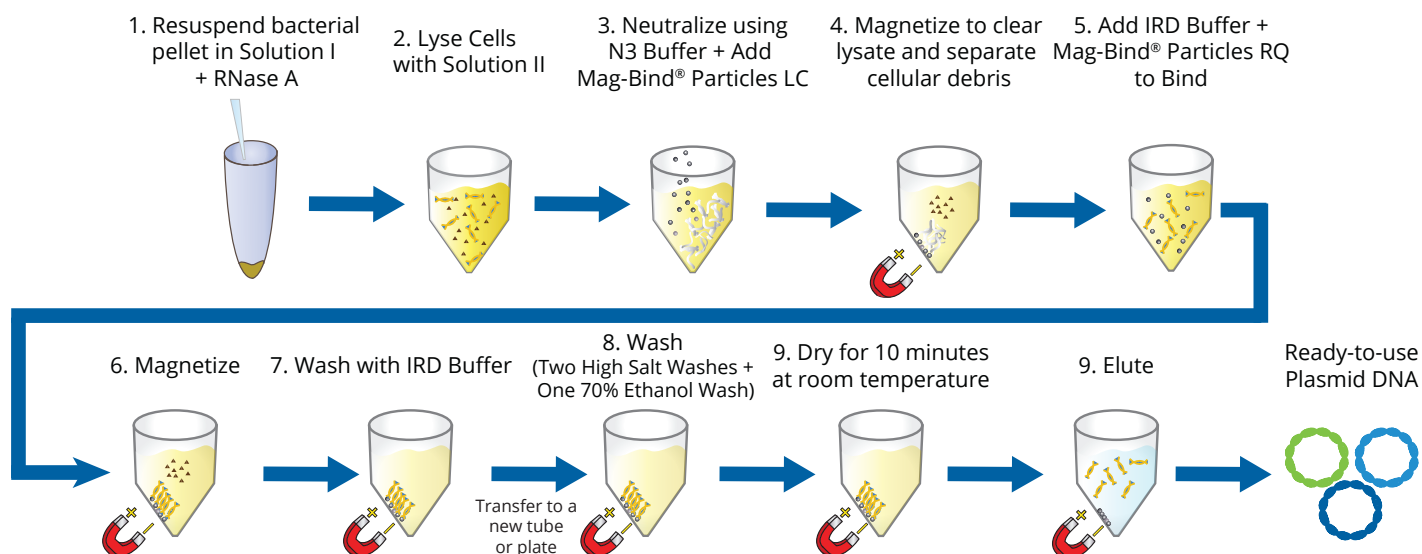


Figure 2. Protocol overview for fully automated plasmid DNA extraction using Mag-Bind® Particles LC for lysate clearance.

Results

An automated method was generated for plasmid DNA extraction using the Mag-Bind® Endo-free Plasmid Mini Kit on the Hamilton Microlab® STAR™ (Figures 1 & 2). Using this workflow, pGEM plasmid DNA was purified from 1 mL of DH5α *E. coli* cultures in approximately 95 minutes. Purified Plasmid DNA was eluted in 100 µL and quantified using Thermo Scientific's NanoDrop™ 2000c system. Plasmid yields were consistent among the replicates and had excellent purity ratios, with A260/A280 ~1.8 and A260/A230 ~2.0 (Figure 3).

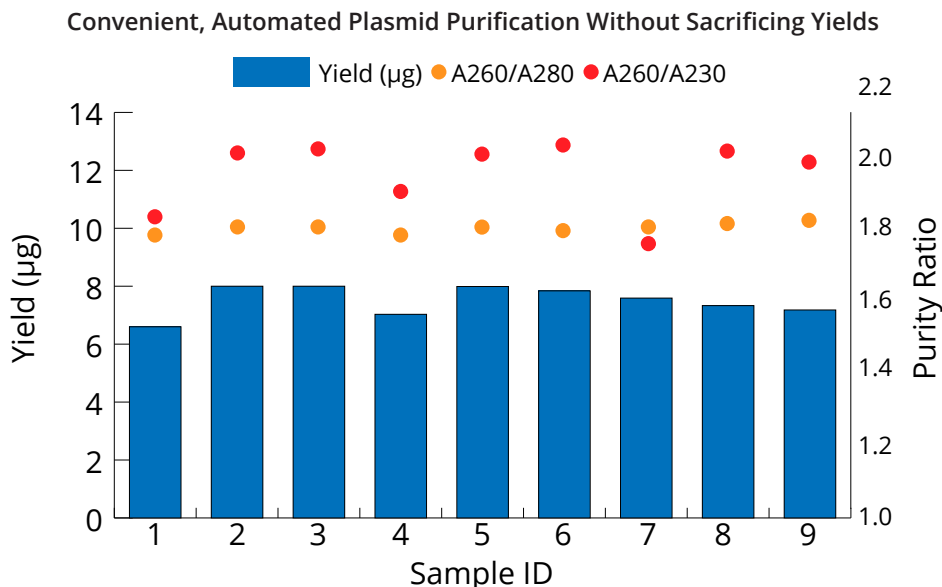


Figure 3. pGEM plasmid was purified from 1 mL DH5α cultures using the Mag-Bind® Endo-free Plasmid Mini Kit (M1261), fully automated on the Hamilton Microlab® STAR™ platform, starting from a bacterial pellet and using lysate clearance beads.

Conclusions

The Mag-Bind® Endo-free Plasmid Mini Kit (M1261) is capable of extracting high-yielding, high-quality plasmid DNA from up to 1.5 mL bacterial culture in approximately 95 minutes using a fully automated workflow with no manual intervention.

Important: Please contact your Omega Bio-tek Field Application Scientist for script and other pertinent instructions. It is the responsibility of the user to validate any automated method for any particular use.

Product Information

Description	Product No.	Size
Mag-Bind® Endo-free Plasmid Mini Kit	M1261-00	1 X 96 Preps
	M1261-01	4 X 96 Preps