MCMag Gel Extraction Kit Manual

MCMag Gel Extraction Kit contains MCmag (magnetic) beads that specifically bind DNA. The purification procedure removes primers, nucleotides, enzymes, mineral oil, salts, agarose, ethidium bromide, and other impurities from DNA samples, ideal for automation of high-throughput processing. A great advantage of MCMag Gel Extraction Kits is the ability to retrieve DNA molecules with a small size range (~ 50 bp). The retrieved DNA is compatible with multiple molecular cloning systems such as Gibson Assembly, TA cloning and MCLAB Choo-Choo Cloning kits.

Notes: Magnetic stand, Isopropanol (100%) and ethanol (70%) are required.

1. Excise the DNA fragment from the agarose gel with a clean, sharp scalpel.

   Minimize the size of the gel slice by removing extra agarose.

2. Weigh the gel slice in a tube. Add 3 volumes of Buffer A to 1 volume of gel (100 mg ~ 100 µl). For example, add 300 µl of Buffer A to each 100 mg of gel. For >2% agarose gels, add 6 volumes of Buffer A.

3. Incubate at 50°C for 10 min (or until the gel slice has completely dissolved). To help dissolve gel, mix by vortexing the tube every 2–3 minutes during the incubation.

4. Add 1 gel volume of isopropanol to the sample and mix.

5. Vortex MCmagnetic beads until the slurry is an even color and all beads are in suspension. Add 20 µl MCmagnetic beads to the tube containing sample then mix.

6. Wait for 5 minutes then place the tube on the magnetic stand and wait for another 5 minutes for beads to bind to the magnetic stand.

7. With the tube still on the magnetic stand, decant supernatants, then wash beads with 500 µl 70% Ethanol and decant the ethanol.

8. Repeat the 70% Ethanol wash step one more time.

9. Open the tube cap and dry the beads for 10 minutes at room temperature.

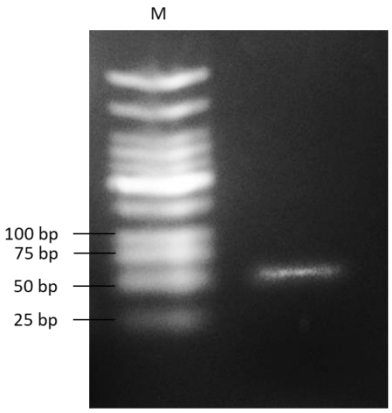
10. Take the tube off the magnetic stand then add 30 µl ddH2O to elute the DNA from beads.

11. 13,000 rpm centrifuge for 5 minute to collect the beads to the bottom of tube (Optional).

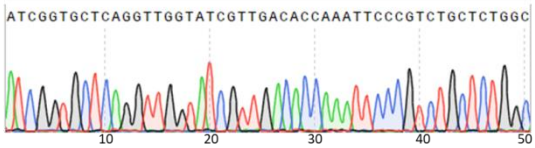
12. Place the tube back on the magnetic stand and wait for 5 minutes.

13. Transfer the supernatant to a new tube.

A

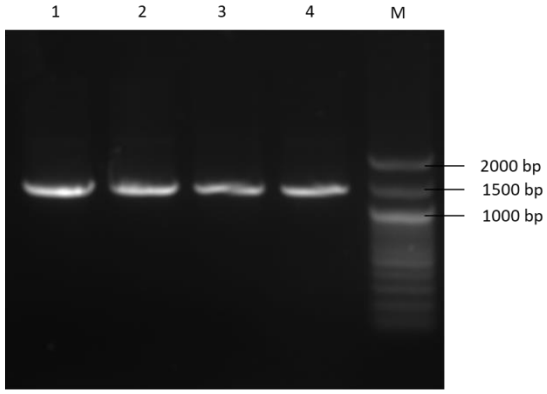


B



A. Gel electrophoresis result of DNA retrieved using MCmag beads from agarose gel that running 50 bp PCR products.
B. The Sanger Sequencing result of cloned 50 bp DNA on TA cloning pCR2.1 vector. The 50 bp DNA is retrieved using MCmag beads from agarose gel, then is TA cloned into pCR2.1 vector.

C



C. Gel electrophoresis result of DNA retrieved using MCmag beads (lane 1 and 3) or Silica Column (lane 2 and 4) . DNA are retrieved from agarose gel that running 1450 bp PCR products.