7040 Virginia Manor Road
Beltsville, MD 20705, USA
Web: www.abpbio.com
Email: info@abpbio.com

EasyMag Gel DNA Extraction Kit

Catalog Number: D105-1, D105-2

Table 1. Kit Components and Storage

Kit Component	D105-1 (50 preps)	D105-2 (200 preps)	Storage	Stability
Buffer GDB	25 mL	100 mL	RT	The product is stable for one year when stored as directed.
Buffer PW*	15 mL	2×25 mL	RT	
Elution buffer	15 mL	25 mL	RT	
MagBinding Beads	2.5 mL	10 mL	2-8 °C	

***** Prior to use, add absolute ethanol to **Buffer PW** according to the bottle label.

Product Description

EasyMag Gel DNA Extraction Kit uses magnetic bead technology to purify DNA fragments ranging from 100 bp to 10 kb from all grades of agarose gels with high recovery (> 80%). The kit uses a specialized binding buffer system that dissolves the gel slice and binds to magnetic beads. The bind step is followed by two rapid wash steps and DNA is eluted with elution buffer. Purified DNA is ready for a variety of downstream applications such as ligations, PCR amplification, restriction enzyme digestion, cloning, and various labeling reactions.

Features

- ❖ Rapid – DNA recovery from an agarose gel in 15 min.
- ❖ Safe – No phenol/chloroform extractions.
- ❖ High-quality – DNA is suitable for a variety of downstream applications.

Things to do before starting

- Buffer GDB may form precipitates upon storage. If necessary, warm to 50°C to redissolve.
- Buffer PW is supplied as concentrates. Before using for the first time, add the appropriate amount of ethanol (96-100%) as indicated on the bottle to obtain a working solution.
- Preheat a water bath or heating block to 50°C.

Purification Protocol

1. Perform agarose gel electrophoresis to fractionate DNA fragments. It is strongly recommended that fresh TAE buffer or TBE buffer be used as running buffer. Do not reuse running buffer as its pH will increase and reduce yields.
2. When adequate separation of bands has occurred, carefully excise the DNA fragment of interest using a wide, clean, sharp scalpel. Minimize the size of the gel slice by removing extra agarose.
3. Determine the appropriate volume of the gel slice by weighing it in a clean 1.5 mL microcentrifuge tube. Assuming a density of 1 g/mL, the volume of gel is derived as follows: a gel slice of mass 0.1 g will have a volume of 0.1 mL.
4. Add 1.5 volume Buffer GDB. For recovery of DNA fragment smaller than 200 bp, add 3 volumes Buffer GDB.

Note: Buffer GDB may be precipitated during storage, if happen, heat it at 50^{o}C to dissolve.

5. Incubate at 50°C for 10 minutes or until the gel has completely melted. Vortex or shake the tube every 2-3 minutes.
6. Add one gel volume of isopropanol and 50 µL MagBinding Beads.
7. Vortex to mix thoroughly. Let sit at room temperature for 5 minutes.
8. Transfer the tube to a magnetic rack for an additional 2 minutes or until beads pellet and supernatant is cleared. With the tube on the magnetic rack remove the supernatant and discard.
9. Leave the tube on the magnet. Add 600 µL Buffer PW to the tube. Let sit at room temperature for 1 minute. It is not necessary to resuspend the magnetic beads. Aspirate and discard the cleared supernatant. Do not disturb the magnetic beads.

   Note: Buffer PW must be diluted with absolute ethanol according to the bottle label before use.
10. Repeat step 9 for a second wash step.
11. Leave the tube on the magnetic rack, open the cap and air dry the beads at RT for 10-15 min. Remove any residual liquid with a pipettor.

    Note: This step is critical for removing of trace ethanol that may interfere with downstream applications.
12. Add 30-50 µL of Elution buffer to the tube. Resuspend the beads by vortexing for 1 min, and let sit at RT for 2-3 min.
13. Replace the tube on the magnetic rack for 2 minutes or until beads pellet. Transfer the cleared supernatant to a clean tube.
14. Store the DNA at -20ºC.

Troubleshooting

Problem	Possible cause and suggestions
Low yield	• Agarose gel does not completely dissolve: Allow gel to completely melt. Add more Buffer GDB if necessary. • Too little Buffer GDB added to gel: Volume of agarose gel slice determined incorrectly. Add enough Buffer GDB as instructed. • Buffer PW is not diluted with ethanol: Buffer PW must be diluted with absolute ethanol before use. • DNA remains bound to beads: Increase elution volume. • Incomplete resuspension of the beads during elution: Vortex or pipet up and down to fully resuspend the beads.
Poor performance in downstream applications	• Salt contamination: Remove any residual liquid with a pipettor after each wash step. • Ethanol contamination: Ensure the beads are completely dried before elution.