INSTRUCTIONS

Magnetic DNA Gel Extraction Kit

Catalog No.: DF01001 DF01002

AvanBio Inc.

239 New Road, Suite A-107
Parsippany, NJ 07054
U.S.A.

Phone: +1 (800) 278-9865
Fax: +1 (855) 378-6845
Email: support@avanbio.com

【Introduction】

EmerTher Magnetic DNA Gel Extraction Kit is used to purify DNA fragments from agarose gel following gel electrophoresis.

The kit contains superparamagnetic nanoparticles, which are coated through a unique process, enabling strong binding with DNA fragments with little to no non-specific binding.

Extraction process is simple and fast: add Gel Solubilization Solution to dissolve agarose gel; DNA fragments are then extracted by magnetic beads. The kit is suitable for purification of 50bp-20kb DNA. DNA recovery is usually up to 95%. Purified DNA are ready for direct use in downsteam applications, including sequencing, ligation and transformation, restriction digestion, labeling, microinjection, PCR, *in vitro* transcription, hybridization and other subsequent experiments.

【Product Features】

- **High-speed:** fast purification of DNA fragments from agarose gel
- **High yield:** 25 μl of magnetic beads can bind 10 μg DNA
- **High recovery**: recovery of DNA fragments is up to 95%
- **High quality**: Purify DNA fragments have high quality and show reliable performance in PCR, restriction enzyme digestion, cloning, and labeling, etc.
- **Automation:** no liquid-liquid mixing and separation process; therefore, the whole procedure can be easily automated

【Components】

	DF01001 *(100 samples)*	*DF01002* *(500 samples)*
Gel Solubilization Solution	40 ml	200 ml
Magnetic Bead Suspension	2.5 ml	12.5 ml
Precipitation Solution	30 ml	150 ml
Washing Solution W1	100 ml	500 ml
Washing Solution W2	—[a]	—[a]
Elution Solution[b]	12 ml	55 ml

[a] Prepared by user: Washing Solution (75% ethanol in water)

[b] Elution Solution: TE buffer (pH 7.5-8.5) or ddH_2O

【Storage and Expiration】

Stored at room temperature for 18 months; do not freeze the beads

【Device recommended】

A magnetic separation rack or an automatic magnetic particle processor, a water bath

【Experiment Procedure】

1. Excise the target gel containing the DNA fragment of interest.
2. Weigh the gel slice in a tube and add 3 × of Gel Solubilization Solution (e.g. add 300 ml of Gel Solubilization Solution to 100 mg of gel slice).
3. Incubate the tube containing the gel slice and Gel Solubilization Solution in a water bath at 65 °C for 5-10 min until the gel is completely dissolved. Invert the tube 3-4 times during incubation to accelerate the solubilization process.
4. Remove the tube from the water bath after the gel is dissolved. Add 25 µl magnetic beads to the tube after the gel is cooled down and mix for 1-2 min.
5. Add Precipitation Solution (200 µl Precipitation Solution per 100 mg of gel is recommended), invert the tube for 1-2 min to mix.
6. Place the tube on a magnetic separation rack, so beads are pulled to the side of the tube. Discard supernatant.
7. Add 500µl Washing Solution W1, mix with beads for 1 min; Place the tube back to the magnetic separation rack, discard supernatant.
8. Add 500µl Washing Solution W1 one more time, mix with beads for 1 min; Place the tube back to the magnetic separation rack, discard supernatant.
9. Add 500µl Washing Solution W2, mix with beads for 1 min; transfer the liquid containing the beads to a clean centrifuge tube. Place the tube back to the magnetic separation rack, discard supernatant completely.
10. Let beads stand for 5 min to remove residual ethanol.
11. Add 10-30µl Elution Solution (TE buffer or ddH_2O), mix with beads for 5 min at 56°C to release DNA from the beads.
12. Place the tube back to the magnetic separation rack and transfer supernatant containing DNA to a clean centrifuge tube for DNA testing or other subsequent experiments.

【Additional Information】

1. The Solubilization Solution may precipitate after long-term storage at low temperature. If this happens, please warm this solution in a water bath at 37°C and use it after it turns to a clear solution.
2. The Solubilization Solution may cause irritation after direct contact. If the solution is accidentally splashed on skin, please wash with plenty of water.
3. Remove ethanol completely before the addition of the elution solution. Let beads stand for 5 min or longer to remove residual ethanol. Too much ethanol residual may affect subsequent tests. However, do not over dry the beads, since this makes it harder to release DNA fragments from beads and may result in reduced yield.
4. Avoid freezing, drying or centrifugation at a high speed during use and storage of beads. Otherwise, this may decrease the binding capacity of the beads.
5. The kit is suitable for the purification of DNA ranging from 50bp to 20kb. Recovery may be slightly lower for DNA which is less than 100 bp or larger than 10 kb or if DNA content is very low in the sample.

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This product is for research use only, and is not for use in diagnostic procedures. Please visit our website at www.avanbio.com for MSDS information and more life science research products from AvanBio. For technical support, please email us: support@avanbio.com.