

Magnetic cfDNA Extraction Kit

CE NMPA



1. Description

EmerTher® Magnetic Circulating Free DNA Extraction Kit is used for extracting circulating free DNA (cfDNA) from biological samples (e.g. plasma) with high efficiency and is an ideal sample preparation kit for Noninvasive Prenatal Testing (NIPT) and liquid biopsy.

The experiment procedure is simple and efficient: 1) add sample to a lysis-binding solution to enable the binding of cfDNA to magnetic beads; 2) apply magnetic force enabling easy wash of the beads with buffers; 3) elute cfDNA from the beads using an elution solution.

Purified cfDNA can be directly used for gene sequencing (such as NIPT or liquid biopsy), library construction, and other downstream applications.

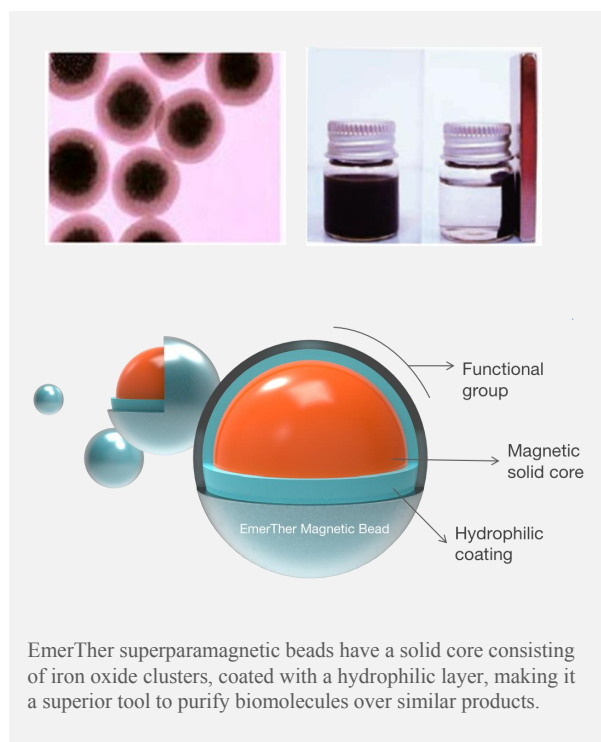
2. Features

High throughput: Fast extraction, complete in < 1 hr

Flexible sample volume: excel at extraction of a trace amount of cfDNA from samples (200 μ L to several mL). Sample extraction process is scalable for large volumes.

CfDNA peak resides at ~170-200 bp with high purity and high concentration

Automation: compatible with a variety of automated magnetic bead processors; pre-filled plates are provided if needed.



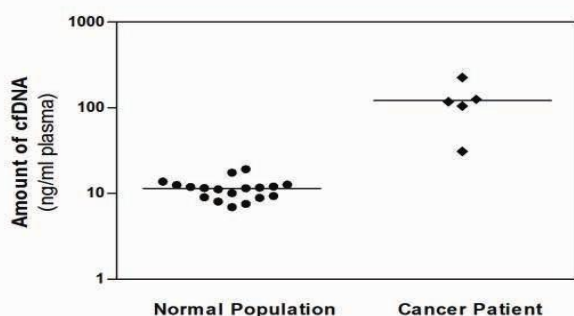
Uniform nano-superparamagnetic bead mass production capacity + optimized technology and reagent formulation:

**Reliable and Efficient Extraction,
Originated from Core Technologies**

3. Performance

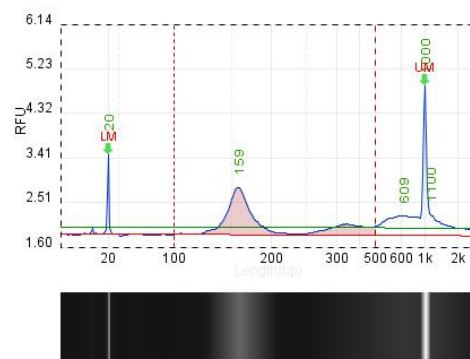
Experiment 1

cfDNA extracted from 23 plasma samples (5 cancer patients and 18 healthy volunteers, 1 mL/sample) with EmerTher cfDNA extraction kit and quantified by AccuBlue DNA quantitation



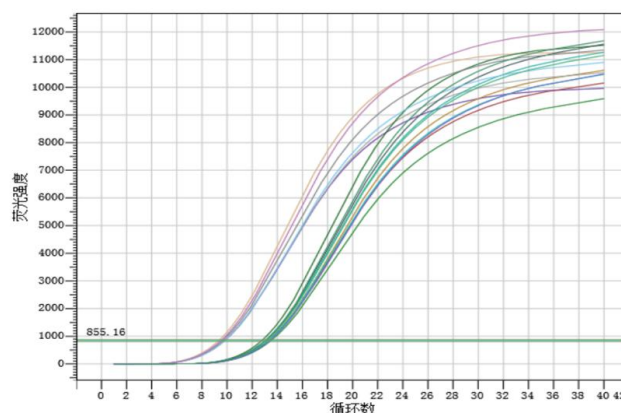
cf DNA content in normal population (~10 ng/mL) and cancer patient (~100 ng/mL)

Distribution of extracted cfDNA analyzed by Agilent 2100 bioanalyzer and Qseq capillary electrophoresis



Experiment 2

Evaluation of the recovery of small DNA fragments



0.01 ng and 1 ng small DNA fragments were added to bovine serum (3 mL), which were then extracted using EmerTher cfDNA extraction kit; the fluorescence quantitative PCR results demonstrated the recovery rate of small DNA fragments was >80%

4. Components of the Kits

Catalog No.	DE03001	DE03002
Format	Total sample volume 12 mL (20 preps, calculated based on 600 µL sample/prep)	Total sample volume 60 mL (100 preps, calculated based on 600 µL sample/prep)
Protein digestion solution	1.2 mL	6 mL
Proteinase K	8 mg	40 mg
PK dissolving solution	0.4 mL	2 mL
Solution ER	0.6 mL	3 mL
Magnetic bead suspension	0.3 mL	1.5 mL
Nucleic acid binding buffer	25 mL	125 mL
Washing solution I	30 mL	150 mL
Washing solution II	_ a	_ a
Elution solution ^b	_ b	_ b

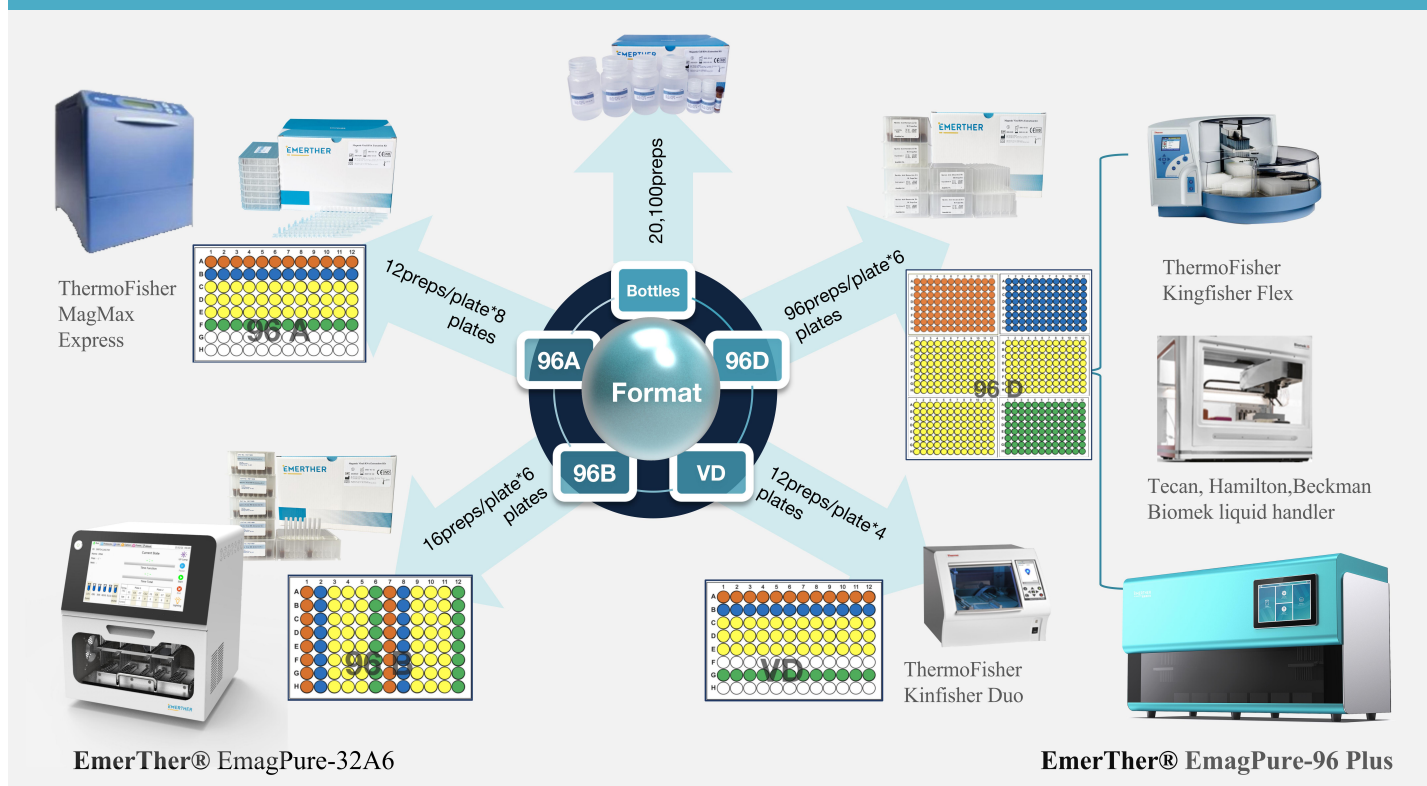
^a Washing solution II (75% ethanol in water), prepared by user.

^b Elution solution (TE buffer pH7.5-8.5 or ddH₂O), prepared by user.

5. Compatible instruments

Prefilled plates contain all necessary extraction reagents, plates and tip combs; ready to be used on most automatic nucleic acid extraction instruments/liquid handlers on the market (e.g. Thermo Kingfisher, Tecan, Hamilton, Beckman Biomek, and our own automatic extraction instruments, etc.).

Compatibility with a Variety of Automatic Nucleic Acid Extraction Instruments



Prefilled plates available for most automatic nucleic acid extraction instruments on the market.

Magnetic Bead Core Technology for High Throughput & Automatic Solutions

IVD Manufacturer SINCE 2010

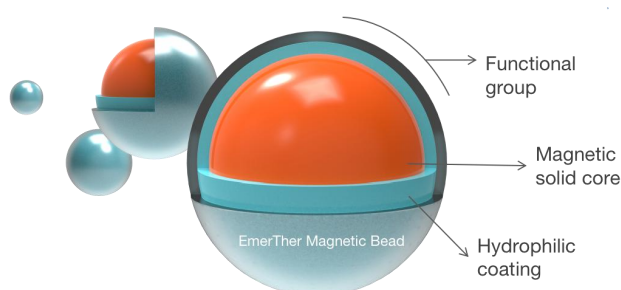
- Nucleic acid extraction
- Protein purification
- Nano-magnetic beads
- Automatic nucleic acid/protein purification instruments

Founded in 2010, the EmerTher Company is an IVD manufacturer specialized in the development and manufacture of nano-scale superparamagnetic beads and related products for biomedical applications.

We provide a number of high-quality, cost-effective products and ready-to-use solutions for biological sample collection, nucleic acid extraction, and protein purification, including:

- 3 viral transport media (non-inactivated; inactivated; inactivated without guanidine) and 3 swabs
- 20+ magnetic bead-based nucleic acid extraction kits
- 6 protein purification magnetic beads
- 6 functionalized magnetic beads
- 3 automatic nucleic acid extraction instruments
- 4 manual magnetic separators

With advanced technologies in nano-scale superparamagnetic bead products and *in vitro* diagnosis, we have helped our customers worldwide to implement automatic nucleic acid and protein extraction/purification procedures in their labs and customized products with high flexibility to meet their special needs.



EmerTher® Magnetic Nucleic Acid Extraction Reagent



**EmerTher®
EmagPure-32A6**



EmerTher® EmagPure-96 Plus