Magnetic Oral Swab and Saliva DNA Extraction Kit

CE NMPA

Bottle format

96B format

96D format

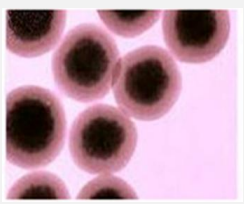
1. Description

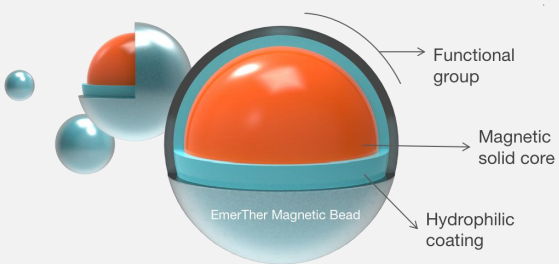
EmerTher Magnetic Oral Swab and Saliva DNA Extraction Kit is used to extract DNA from oral swab and saliva.

The kit contains superparamagnetic nanoparticles which are bound to nucleic acids and an efficient extraction system. The magnetic beads are coated through a unique process, enabling strong binding with nucleic acids and easy elution.

The experimental procedure is simple and efficient: 1)) add oral swab sample (with pre-treatment) or saliva (no pre-treatment) to a lysis-binding buffer to enable DNA release and DNA binding to magnetic beads in one step; 2) apply magnetic force enabling easy wash of the beads with buffers; 3) elute DNA from the beads using an elution solution.

The extraction procedure is fully compatible with automation. Purified DNA can be directly used in a variety of downstream experiments, including PCR, gene sequencing, etc.





EmerTher superparamagnetic beads have a solid core consisting of iron oxide clusters, coated with a hydrophilic layer, making it a superior tool to purify biomolecules over similar products.

2. Features

High-throughput: fast purification, complete the purification process within 40 min

Automation: compatible with a variety of automatic magnetic bead processors. Pre-filled 96-well plates with necessary solutions are available

High extraction efficiency and high purity: extract 2~11 μg DNA per oral swab, OD260/280 ratios are 1.8-2.0

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

Reliable and Efficient Extraction,

Originated from Core Technologies

The EmerTher Company

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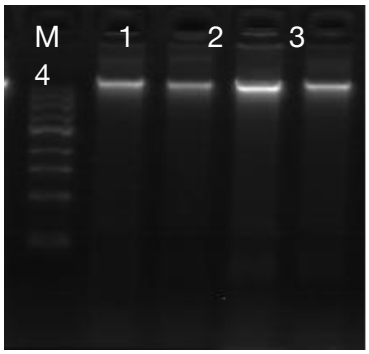
3. Performance

Representative Extraction Results shown by Gel Electrophoresis and UV Data

Experiment 1

Gel electrophoresis, concentration and purity determination of DNA extracted from four oral swab samples



M: MW marker

Sample No.	OD260/280	OD260/230	Conc. (ng/μL)	Total DNA (μg)
Sample 1	1.85	1.68	21.36	2.14
Sample 2	1.82	1.73	25.21	2.52
Sample 3	1.90	1.62	30.87	3.09
Sample 4	1.89	1.68	28.57	2.86

Experiment 2

Extraction results (concentration and purity) of 48 oral swab samples

No.	EmerTher			Competitor			Conc Ratio
	260/280	260/230	Conc. (ng/μL)	260/280	260/230	Conc. (ng/μL)	(EmerTher/ competitor)
1	2.00	1.33	15.87	1.47	3.35	12.84	1.24
2	1.97	1.59	27.51	1.78	1.71	26.44	1.04
3	1.97	1.65	14.49	1.70	2.25	14.96	0.97
4	2.00	1.66	24.88	1.67	3.55	9.80	2.54
5	2.02	1.83	47.76	1.78	1.94	24.30	1.97
6	1.96	1.62	26.89	1.53	10.44	8.97	3.00
7	1.99	1.75	63.25	1.61	5.65	20.08	3.15
8	1.84	1.71	31.96	1.73	2.47	14.79	2.16
9	1.95	1.49	24.79	1.52	3.32	17.37	1.43
10	2.03	1.43	13.25	1.43	3.13	12.07	1.10
11	1.97	1.70	41.34	1.61	3.18	13.90	2.97
12	2.19	1.31	7.91	1.35	10.65	7.37	1.07
13	2.05	1.70	23.76	1.55	3.67	12.92	1.84
14	1.97	1.72	27.05	1.66	2.10	15.86	1.71
15	2.07	1.54	19.98	1.42	3.09	17.91	1.12
16	1.93	1.48	26.21	1.79	1.78	34.45	0.76
17	1.89	1.21	15.21	1.38	15.4	11.64	1.31
18	2.01	1.62	19.63	1.56	2.39	17.59	1.12
19	1.97	1.50	20.82	1.74	1.76	13.06	1.59
20	1.92	1.60	21.10	1.68	1.86	17.13	1.23
21	1.97	1.45	12.86	1.67	2.03	12.64	1.02
22	1.92	1.66	40.01	1.67	1.52	21.01	1.90
23	1.94	1.66	30.97	1.69	1.95	19.32	1.60
24	1.93	1.30	14.64	1.54	2.92	22.95	0.64
25	1.90	1.33	10.42	1.67	1.75	12.33	0.85
26	1.98	1.53	25.25	1.71	1.93	21.04	1.20
27	1.95	1.74	34.92	1.89	2.09	16.09	2.17

No.	EmerTher			Competitor			Conc Ratio
	260/280	260/230	Conc. (ng/μL)	260/280	260/230	Conc. (ng/μL)	(EmerTher/ competitor)
28	1.97	1.75	30.34	3.92	-0.53	0.72	42.14
29	2.04	1.97	13.04	1.69	1.49	9.34	1.40
30	2.02	1.69	22.56	1.75	1.91	12.56	1.80
31	2.06	1.33	13.42	1.76	1.93	8.61	1.56
32	1.95	1.75	19.38	1.62	2.26	11.43	1.70
33	1.96	1.45	19.62	1.73	1.65	13.62	1.44
34	2.01	1.68	27.47	1.66	1.84	15.28	1.80
35	1.88	1.29	22.64	1.64	2.34	13.92	1.63
36	1.87	1.14	11.28	1.80	1.5	15.52	0.73
37	2.09	1.12	11.41	1.72	1.58	11.45	1.00
38	1.99	1.38	15.32	1.78	1.67	18.72	0.82
39	2.00	1.62	25.19	1.97	1.87	17.41	1.45
40	1.96	1.39	20.10	1.66	2.14	13.37	1.50
41	1.99	1.43	21.89	1.57	1.78	11.86	1.85
42	2.01	1.55	30.63	1.78	2.10	19.59	1.56
43	2.01	1.51	19.02	1.88	1.76	15.07	1.26
44	1.88	1.32	13.17	1.81	1.72	14.73	0.89
45	1.85	1.23	10.26	1.80	1.12	9.87	1.04
46	1.95	1.71	35.84	1.87	1.58	29.82	1.20
47	1.94	1.62	25.53	1.76	1.47	14.25	1.79
48	1.98	1.56	18.58	1.61	1.65	10.84	1.71
Average	1.97	1.53	23.11	1.72	2.76	15.35	2.35
STD	0.06	0.19	10.56	0.35	2.67	5.82	5.89

The EmerTher oral swab DNA extraction kit demonstrated superior performance (More DNA extracted with higher purity) compared to a competitor's kit on the market.

4. Components of the Kits

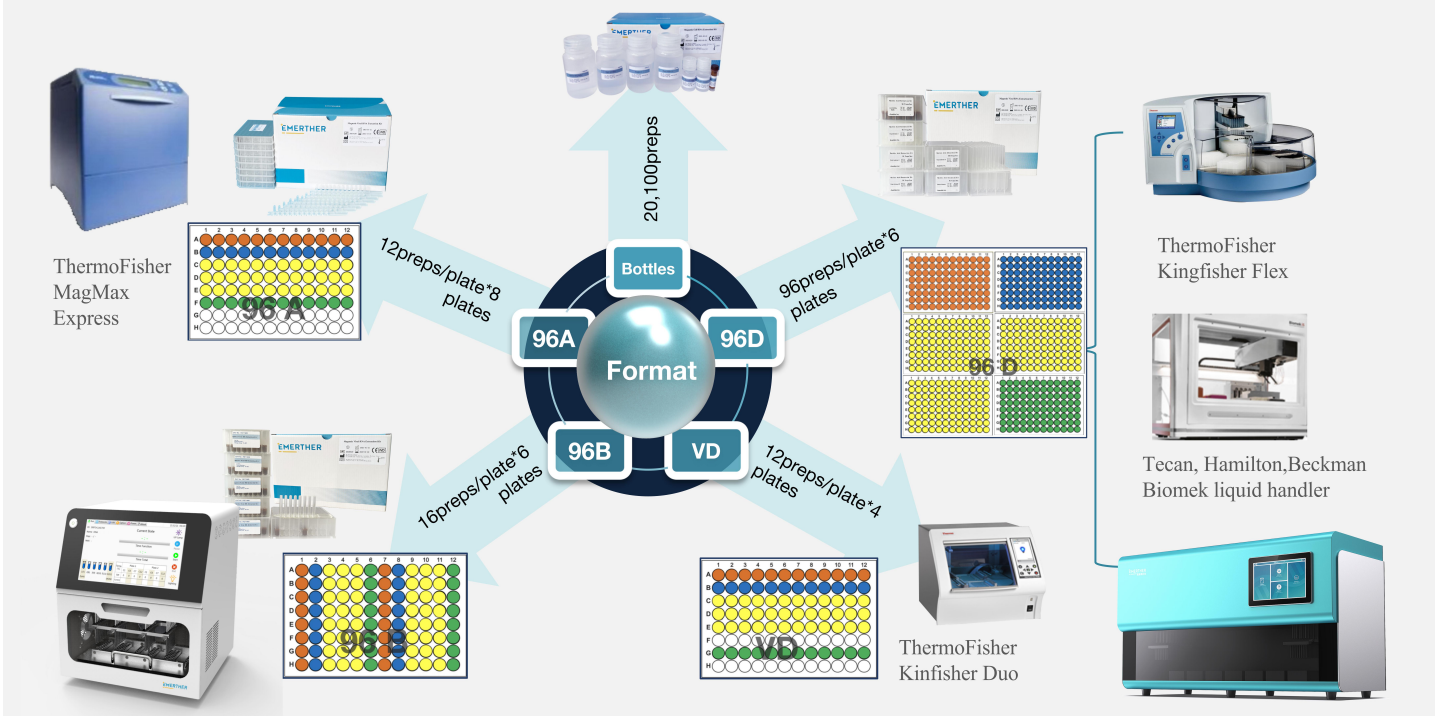
Catalog No.	*DE09001 (20 preps)*	*DE09002 (100 preps)*	*DE0996B (96 preps)*	*DE0996D (96 preps)*
Format	Bottles	Bottles	96-deep well plates	96-deep well plates
ATL buffer	7 mL	35 mL	35 mL	35 mL
Proteinase K	8 mg	40 mg	40 mg	40 mg
PK Dissolving Solution	0.4 mL	2 mL	2 mL	2 mL
Magnetic Bead Suspension	0.6 mL	3 mL	Pre-filled with magnetic beads and extraction reagents	Pre-filled with magnetic beads and extraction reagents
Lysis-binding Buffer	15 mL	65 mL		
Wash Solution I	30 mL	150 mL		
Wash Solution II	75% ethanol in water (prepared by user)			
Elution Solution	3 mL	12 mL		

Pre-treatment of dry oral swab samples: Transfer a swab to a 1.5 mL centrifuge tube; Add 300 µL Digestion Solution, 20 µL proteinase K solution and mix well; Place the tube in a water bath at 56℃ and incubate for 30 min; Transfer all solution into a 2 mL centrifuge tube.
No pre-treatment for saliva samples.

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.

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Magnetic Bead Core Technology for High Throughput & Automatic Solutions

IVD Manufacturer SINCE 2010

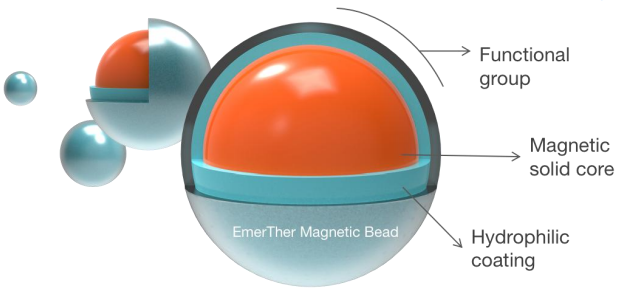
- Nucleic acid extraction
- Protein purification
- Nano-magnetic beads
- Automatic nucleic acid/protein purification instruments

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

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