Certificate of Analysis & Product Manual

Human Identification, Forensic Casework, Sample Collection
Trace DNA Extraction, STR Analysis
DNA Biometrics, Q-PCR

Omni-Mag™ DNA Purification System Kit

Catalog No.: 40-4100-01 & 40-4100-05

Storage Condition: Store at Room Temperature

For Research Use Only. Not for use in diagnostic procedures for clinical purposes

20 years
results you can rely on

Gene Link™

Material Supplied

Storage Condition: Store at 15°C to 25°C.

Omni-Mag™ DNA Purification System Kit			
Content	Catalog No.	Product	Size
☐	**40-4100-01**	**Omni-Mag™ DNA Purification System Kit, 100 Purifications**	**100**
Omni-Mag™ DNA Purification System Kit, 100 Purifications Components			
☐	40-4119-05	Omni-Mag™ Lysis Buffer; 50 mL	50 mL
☐	40-4118-08	Omni-Mag™ PMP (Paramagnetic particles); 800 µL	800 µL
☐	40-4026-06	G3 Wash solution; 2X concentrate; 60 mL	60 mL
☐	40-5016-15	DNA Elution Buffer; 4 X 1.5 mL	1.5 mL

☐	**40-4100-05**	**Omni-Mag DNA Purification System, 500 Purifications**	**500**
Omni-Mag™ DNA Purification System Kit, 500 Purifications Components			
☐	40-4119-25	Omni-Mag™ Lysis Buffer; 250 mL	250 mL
☐	40-4118-40	Omni-Mag™ PMP (Paramagnetic particles); 4 mL	4 mL
☐	40-4026-30	G3 Wash solution; 2X concentrate; 2X 150 mL	300 mL
☐	40-5016-15	DNA Elution Buffer; 20 X 1.5 mL	1.5 mL

Certificate of Analysis & Product Specifications

All component reagents have been manufactured using molecular biology grade water and certified to be DNase Free. Each lot is tested for DNA extraction from a dilution of blood as low as 100 cells. The purified DNA is tested for reliable PCR amplification of a multiplex STR analysis.

Appropriate nuclease free handling, dispensing and storage conditions required.

Manufacturing lot numbers are stated on the label of each product and accompanying packing slip.

For research use only. Not for use in diagnostic procedures for clinical purposes.

Product Label Information

	Catalog Number	Description	Size
REF	40-4119-05	Omni-Mag™ Lysis Buffer; 50 mL	50 mL
	40-4118-08	Omni-Mag™ PMP (Paramagnetic particles); 800 µL	800 µL
	40-4026-06	G3 Wash solution; 2X concentrate; 60 mL	60 mL
	40-5016-15	DNA Elution Buffer; 4 X 1.5 mL	1.5 mL

REF	40-4119-25	Omni-Mag™ Lysis Buffer; 250 mL	250 mL
	40-4118-40	Omni-Mag™ PMP (Paramagnetic particles); 4 mL	4 mL
	40-4026-30	G3 Wash solution; 2X concentrate; 2X 150 mL	300 mL
	40-5016-15	DNA Elution Buffer; 20 X 1.5 mL	1.5 mL

RUO Research Use Only	25°C 15°C	LOT
Research Use Only	**Storage** Store at 15°C to 25°C	**Lot Number** Stated on product tube and packing slip
Expiry As marked on product	**Instructions** Consult product manual	**QR Code** Visit Gene Link website for product details

Product Description & Application

Omni-Mag™ DNA Purification System

The Omni-Mag™ DNA purification system is a particularly optimized kit for extraction of DNA from limiting samples usually encountered in forensic environment. This kit is also useful for DNA Biometric purposes from fingerprint DNA samples (Trace DNA or low quantity DNA samples; few nanogram to touch DNA ~100 pico-gram). Examples of samples are trace blood samples, sweat, tear and other bodily fluids in the range of 50 µL and less; similarly fingerprint samples (touch DNA) are ideal for extraction using the Omni-Mag™ DNA purification system. For larger volume of samples we recommend to use Gene Link Omni-Pure™ DNA Purification system [Catalog Number: 40-4070-01].

Working with trace material especially in a forensic setting requires maximum DNA capture and retrieval. The Omni-Mag™ DNA purification system components are optimized for maximum DNA recovery even from trace DNA that consistently yields DNA profile. The Omni-Mag™ DNA purification system kit has been tested on various substrates/matrices including cotton swabs, flocked matrix and other matrices.

The underlying method is based on quantitative lysis in chaotropic salts, membrane dissolution using a blend of surfactants followed by binding of DNA and RNA using silica coated paramagnetic particles. The bound DNA is released by hydrating in low salt buffer.

The purified DNA is suitable for all molecular biology applications including direct PCR amplification for STR and SNP analysis.

Protocol

See Page 2 for a list of material supplied.

Material Required and Supplied by User

- 1M DTT. Usage : 1 µL of 1M DTT for every 100 µL of lysis buffer.
  Preparation of 1M DTT
  Dissolve 1 g of DTT (1,4-Dithiothreitol, CAS Number 3483-12-3, mw 154.25) in nuclease-free water so that the final volume is 6.6 mL. The final concentration of DTT will be 1M. Aliquot ~500 µL and store frozen at –20°C. Once thawed can keep at 4°C for a week. Do not freeze again. Discard after one week.
- 100% ethanol
- 60-75°C heat block, water bath, oven or thermal cycler
- vortex mixer
- Microcentrifuge tubes 1.5 mL
- Spin Basket Tubes for 1.5 mL microcentrifuge tubes for processing
- Filter tipped aerosol-resistant pipette tips
- Magnetic Separation Stand

Preparation of 1X G3 Wash Solution

G3 Wash Solution is supplied as a 2X concentrate solution. Prior to first use add 100 % Ethanol solution as listed below directly to the content of the bottle. There is sufficient room in the bottle to accommodate this additional volume. Appropriately write date ethanol added on the label. Store the bottle with cap tightly closed to prevent evaporation of ethanol.

Catalog Number	Product Bottle	Volume of 100% Ethanol to add
40-4026-06	G3 Wash solution; 2X concentrate; 60 mL	60 mL
40-4026-30	G3 Wash solution; 2X concentrate; 2X 150 mL	150 mL

Preparation of Omni-Mag™ Lysis Buffer with 1M DTT

Calculate the number of DNA extraction to be performed for the session. Usage is 1 µL of 1M DTT for every 100 µL of lysis buffer. For each extraction 450 µL of lysis buffer is used. Add 10% additional to the total for pipetting loss. Mix by inversion several times. Discard leftover buffer with added DTT.

		WORKSHEET		
Omni-Mag™ Lysis Buffer Usage per DNA extraction	**1 M DTT to add**	**Number of extractions (N)**	**N*450 µL Lysis Buffer**	**1 M DTT to add = N*4.5**
450 µL	4.5 µL			

Protocol

Sample Collection: Follow sample collection procedure according to manufacturer's protocol.

DNA Purification

1. Place swab or other matrix with collected sample in a 1.5 mL microcentrifuge tube.
2. To the tube containing the sample add 300 µL Omni-Mag™ Lysis Buffer containing DTT, vortex vigorously and incubate at 60°C for 30min.
3. Vortex and let the sample cool down to ambient temperature.
4. Spin microcentrifuge tube for 30 seconds at 5K rpm.
5. **NOTE: For samples collected using Omni-Matrix™ skip steps 6-8 and directly proceed to step 9.**
6. Carefully transfer contents to a new microcentrifuge tube with a spin basket.
7. Transfer swab also in the spin basket placed inside the microcentrifuge tube.
8. Spin the microcentrifuge tubes containing the spin baskets for 30 seconds at 5K rpm. After spinning discard spin basket containing the swab or other sold matrix substrate.
9. Vortex Omni-Mag™ PMP (Paramagnetic particles) before use and ensure that the particles are evenly resuspended and not settled at the bottom.
10. Add 7 µL of Omni-Mag™ PMP (Paramagnetic particles) to the tubes with the lysis buffer. Vortex vigorously every minute during five minutes, then centrifuge briefly.
11. Place tube(s) in the magnetic stand.
12. While tubes are in the magnetic stand, and all the particles are collected towards the magnet carefully remove and discard all of the solution using a pipette. Take care not to disturb the magnetic particles.
13. To the tubes with the collected magnetic particles add 150 µL of Omni-Mag™ Lysis Buffer containing DTT. Vortex and return microcentrifuge tubes to the magnetic stand.
14. While tubes are in the magnetic stand and all the particles are collected towards the magnet carefully remove and discard all of the remaining solution using a pipette. Take care not to disturb the magnetic particles.
15. Add 350 µL of 1X G3 Wash solution. Vortex vigorously, then centrifuge briefly at 5 seconds at 2K rpm.
16. Place tubes in the magnetic stand. While tubes are in the magnetic stand, and all the particles are collected towards the magnet carefully remove and discard all of the solution using a pipette. Take care not to disturb the magnetic particles.
17. Repeat steps 11-12 twice.
18. Air-dry the samples for 5 minutes at room temperature; do not dry for more than 20 minutes.
19. Add 50 µL of DNA Elution Buffer. Vortex vigorously and keep for 20 min at 60°C.
20. Vortex and centrifuge briefly at 5 seconds at 2K rpm. Place the tube in the magnetic stand followed by transferring the DNA solution to a new microcentrifuge tube using a pipette.
21. If required the eluted DNA in 50 µL can be concentrated by evaporation in a speedvac to a smaller volume to accommodate higher DNA concentration from trace DNA samples e.g fingerprint and reverse fingerprint samples. Recommended reconstitution volume is 10 µL in molecular biology grade water.
22. DNA sample is ready for all molecular biology application including SNP analysis and STR amplifications for forensic applications.

Ordering Information

Omni-Mag™ DNA Purification System Kits		
Product	**Catalog No.**	**Unit Size**
Omni-Mag™ DNA Purification System Kit, 100 Purifications	40-4100-01	100
Omni-Mag™ DNA Purification System Kit, 500 Purifications	40-4100-05	500
Omni-Mag™ DNA Purification System Kit, 100 Purifications. Components		
Omni-Mag™ Lysis Buffer; 50 mL	40-4119-05	50 mL
Omni-Mag™ PMP (Paramagnetic particles); 800 µL	40-4118-08	800 µL
G3 Wash solution; 2X concentrate; 60 mL	40-4026-06	60 mL
DNA Elution Buffer; 4 X 1.5 mL	40-5016-15	1.5 mL
Omni-Mag™ DNA Purification System Kit, 500 Purifications. Components		
Omni-Mag™ Lysis Buffer; 250 mL	40-4119-25	250 mL
Omni-Mag™ PMP (Paramagnetic particles); 4 mL	40-4118-40	4 mL
G3 Wash solution; 2X concentrate; 2X 150 mL	40-4026-30	300 mL
DNA Elution Buffer; 20 X 1.5 mL	40-5016-15	1.5 mL

Related Products Ordering Information

DNA & RNA Reconstitution Solutions

Product	Catalog No.	Unit Size
DNA & RNA Reconstitution Solutions Pack (contains 50 mL each of DEPC Treated Water [40-3000-05], Nuclease Free Water (DEPC Free) [40-3001-05], TE pH 7.0 [40-5011-05] and RNA Reconstitution Solution[40-5014-05)	40-3000-00	1 Pack
RNA Reconstitution & Storage Solution (1 mM Sodium Citrate pH 6.4;) 10 X 1.6 mL	40-5014-16	10 X 1.6 mL
RNA Reconstitution & Storage Solution (1 mM Sodium Citrate pH 6.4); 50 mL	40-5014-05	50 mL
TE Buffer 1X solution pH 7.0; 50 mL	40-5011-05	50 mL
TE Buffer 1X solution pH 7.5; 50 mL	40-5012-05	50 mL
TE Buffer 1X solution pH 8.0; 50 mL	40-5013-05	50 mL
Nuclease Free Water (DEPC Free); 10 X 1.6 mL	40-3001-16	10 X 1.6 mL
Nuclease Free Water (DEPC Free;) 50 mL	40-3001-05	50 mL
Nuclease Free Water (DEPC Free); 500 mL	40-3001-50	500 mL
Nuclease Free Water (DEPC Free); 1L	40-3001-01	1 L
DEPC Treated Water; 10 X 1.6 mL	40-3000-16	10 X 1.6 mL
DEPC Treated Water; 50 mL	40-3000-05	50 mL
DEPC Treated Water; 500 mL	40-3000-50	500 mL
DEPC Treated Water; 1L	40-3000-01	1 L

Related Products Ordering Information

PCR Additives & Reagents

Product	Catalog No.	Unit Size
Taq DNA Polymerase 300 units; 5 µ/µL; 60 µL	40-5200-30	300 units
PCR Buffer Standard (10 X); 1.6 mL	40-3060-16	1.6 mL
PCR Buffer Mg Free (10 X); 1.6 mL	40-3061-16	1.6 mL
Taq Polymerase Dilution Buffer; 1 mL	40-3070-10	1 mL
dNTP 2mM (10X); 1.1 mL	40-3021-11	1.1 mL
$MgCl_2$; 25 mM; 1.6 mL	40-3022-16	1.6 mL
Omni-Marker™ Universal Unlabeled; 1 mL	40-3005-10	1 mL
Primer and Template Mix; 500 bp; 40 reactions	40-2026-60PT	100 µL
Nuclease Free Water, 10 X 1.6 mL	40-3001-16	10 X 1.6 mL
DMSO, 1 mL	40-3031-10	1 mL
TMAC (Tetramethyl ammonium chloride) 100 mM; 1 mL	40-3053-10	1 mL
KCl 300 mM; 1 mL	40-3059-10	1 mL
Betaine 5M; 1 mL	40-3032-10	1 mL

Document Warranty and Liability

Information in this document is subject to change without notice. This document and all information presented in this document are written as a guide. Gene Link, Inc. does not warrant this document to be free of errors and assumes no responsibility for any errors that may appear in this document.
Gene Link disclaims all warranties with respect to this document, expressed or implied, including but not limited to those of merchantability or fitness for a particular purpose. In no event shall Gene Link be liable, whether in contract, tort, warranty, or under any statute or on any other basis for special, incidental, indirect, punitive, multiple or consequential damages in connection with or arising from this document, including but not limited to the use thereof.

Website

As the receipt of information on the Internet is highly dependent upon factors, including without limitations to, the user's computer, browser, operation system, etc., information may be perceived incorrectly. Therefore, Gene Link does not warrant or guarantee that the information contained on its website www.genelink.com is error free.

Product Warranty and Liability

Warranty: Gene Link makes no warranty of any kind, specifically disclaims and excludes all other warranties of any kind or nature, directly or indirectly, express or implied, including, without limitation, as to the suitability, productivity, durability, fitness for a particular purpose or use, merchantability, condition, or any other matter with respect to Gene Link products. Gene Link products are for research purposes only including custom products. There is no warranty or claim of its performance for any specific research application. All Gene Link products are guaranteed to meet or exceed the specifications stated. Each Gene Link product is shipped with documentation stating specifications and other technical information. If the product fails to meet the stated specifications the sole remedy is prompt replacement by Gene Link or within 30 days of purchase a refund of the purchased price.

Liability: Under no circumstances shall Gene Link be liable for any damages directly or indirectly related to Gene Link's products and services. Whether direct, incidental, foreseeable, consequential, or special (including but not limited to loss of use, revenue or profit), whether based upon warranty, contract, tort (including negligence) or strict liability arising in connection with the sale or the failure of Gene Link products to perform in accordance with the stated specifications.

Research Use Only. Not for use in diagnostic or clinical procedures.

Notice to Purchaser: The purchase of this product conveys to the purchaser the limited, non-transferable right to use the purchased amount of the product only to perform internal research for the sole benefit of the purchaser. No right to resell this product or any of its components is conveyed expressly, by implication, or by estoppel. This product is for internal research purposes only and is not for use in commercial applications of any kind, including, without limitation, quality control and commercial services such as reporting the results of purchaser's activities for a fee or other form of consideration. For information on obtaining additional rights, please contact support@genelink.com.

Gene Link, Inc.
190 Saw Mill River Road
Hawthorne, NY 10532
USA

Tel: (914) 769-1192
Email: support@genelink.com
www.genelink.com