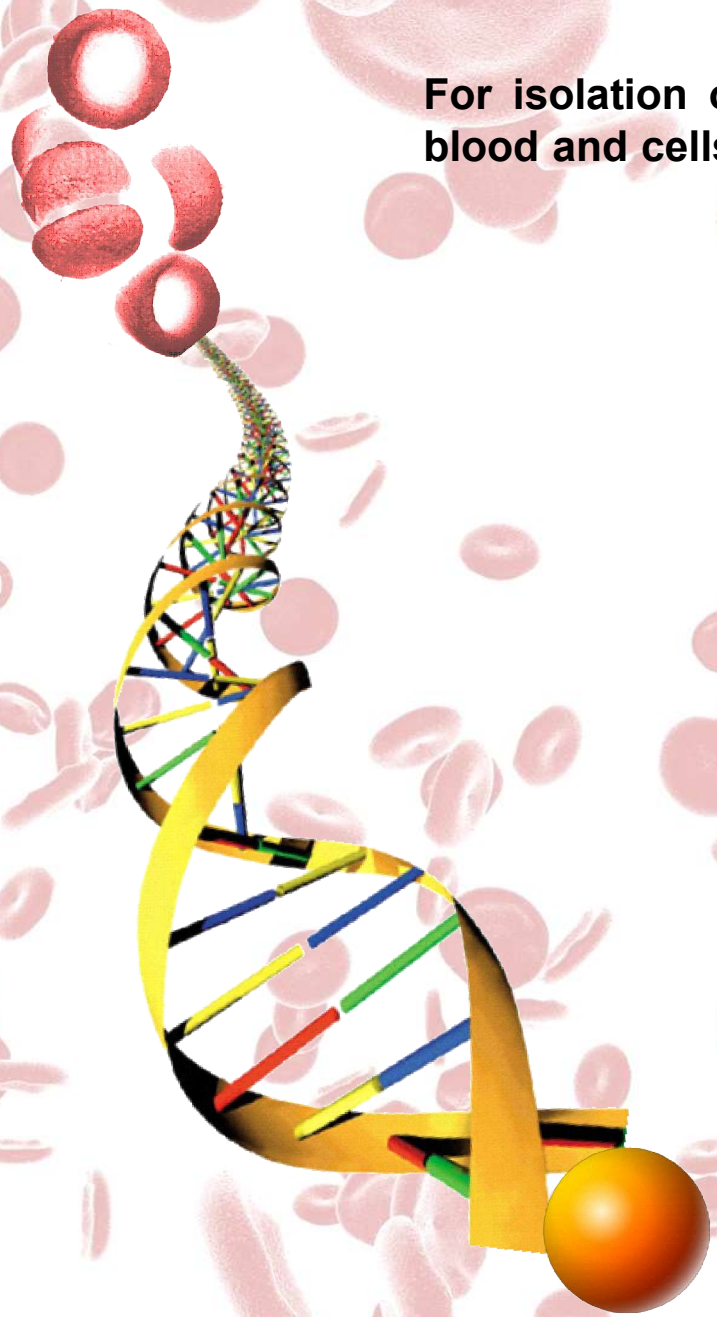
geneMAG-DNA / *Blood*

the magnetic DNA purification kit

For isolation of genomic DNA from blood and cells with magnetic beads



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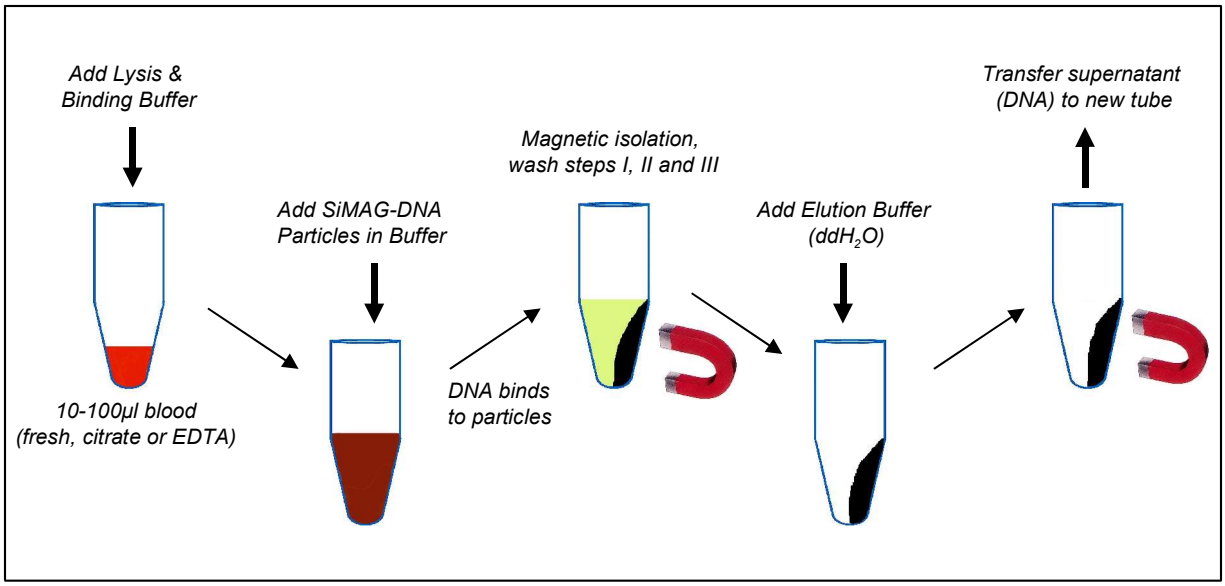
NEW TOOLS IN BIOSCIENCES

The **geneMAG-DNA / *Blood*** kit is a novel, simple and highly efficient tool for the isolation of genomic DNA with magnetic silica beads. The DNA can be isolated from blood samples including fresh, frozen, anti-coagulated blood, buffy coat.

The lysis of cells and binding of DNA is carried out under non-chaotropic conditions with the Lysis & Binding Buffer. The wash steps with Wash Buffer I, II and III guarantee a clean DNA which is suitable for PCR reactions or other biochemical applications.

geneMAG-DNA / *Blood* is highly suitable for a variety of automatization platforms since it requires no centrifugation or vacuum filtration procedures.



Products

Kits	Contents	Number of isolations	Price Euro/US$
geneMAG-DNA / Blood 15 (Cat. No.: 3001-15)	• 15 ml Lysis & Binding Buffer • 30 ml Wash Buffer I • 1.5 ml SiMAG-DNA Beads	15 preps per 100 µl blood	40 / 52
geneMAG-DNA / Blood 100 (Cat. No.: 3001-100)	• 60 ml Lysis & Binding Buffer • 200 ml Wash Buffer I • 10 ml SiMAG-DNA Beads	100 preps per 100 µl blood	220 / 286
geneMAG-DNA / Blood 500 (Cat. No.: 3001-500)	• 300 ml Lysis & Binding Buffer • 1000 ml Wash Buffer I • 50 ml SiMAG-DNA Beads	500 preps per 100 µl blood	900 / 1170

Reagents and Equipment to be Supplied by the User

- **Wash Buffer II**: 70% Ethanol or 70% Isopropanol
- **Wash Buffer III and Elution Buffer:** ddH_2O
- **Vortex mixer** and **heating block** or water bath (60°C), **magnetic separator**

Storage

The kit compounds are stable at room temperature. If there are salt precipitates in the Lysis/Binding Buffer or Wash Buffer I dissolve these precipitates by warming in a water bath.

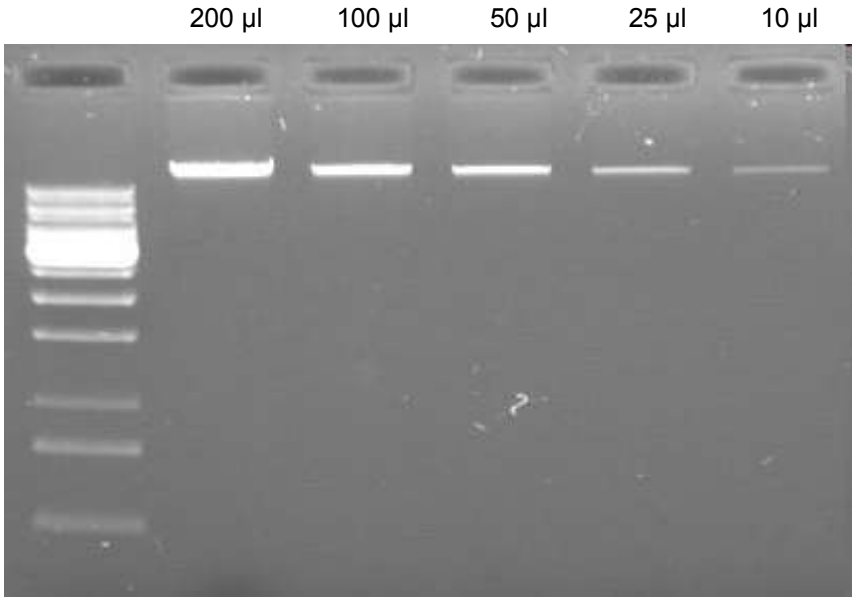
Safety Note

Wash Buffer I contain chaotropic salts, which are irritant. Take appropriate laboratory safety measures and wear gloves when handling. **Avoid skin and eye contact**

Scalable DNA Isolation from whole blood

Blood volume (µl)	10 µl	25 µl	50 µl	100 µl	200 µl
Typical DNA yield (µg)	0.2-0.4	0.5-1.0	1-2	2-4	4-8
Lysis & Binding Buffer (µl)	300	300	300	800	1200
SiMAG-DNA (µl)	10	25	50	100	200
Wash Buffer I (µl) 2x	500	500	500	1000	1500
Wash Buffer II (µl) 1x	500	500	500	1000	1500
Wash Buffer III (µl) 1x	500	500	500	1000	1500
Elution Buffer (µl)	10-40	25-100	50-200	100-400	200-800

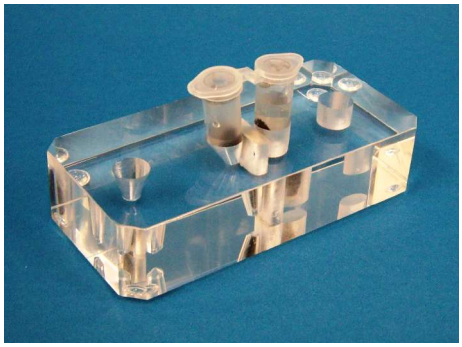
*We recommend ddH_2O for elution, alternatively 10 mM Tris-HCl, pH 8.0 or TE-Buffer, pH 8.0



Agarose gel (1%) analysis of scalable genomic DNA from human whole blood. Blood sample volumes ranging from 200 µl to 10 µl.
(Data kindly provided by Cengiz Öztürk, Charité, University Hospital of Humboldt-University to Berlin, Germany)

Utensils for magnetic DNA purification

The **MagnetoPURE** separator is specially designed for magnetic separation of DNA/RNA in 1.5 ml and 2 ml tubes. The position of the high powerful magnet guaranties fast and easy separation of the magnetic particles.



MagnetoPURE

MagnetoPURE BIG SIZE

Separator	Cat. No.:	Price Euro/US$
MagnetoPURE	MP-10	65 / 85
MagnetoPURE BIG SIZE	MP-20	350 / 460

SPECIAL OFFER

As an introductory offer you will recieve a **geneMAG-DNA 15** kit for free in combination with the purchase of the **MagnetoPURE** separator.

SPECIAL OFFER:	Cat. No.:	Price Euro/US$
MagnetoPURE **geneMAG-DNA 15**	3001-SO	65 / 85

Protocol 1

This protocol describes the isolation of genomic-DNA from 100µl whole blood in microcentrifuge tube.

1. Add 100 µl whole blood to a 1.5 ml microcentrifuge tube

2. Add 600 µl **Lysis & Binding Buffer** and vortex for 30 seconds.

3. Add 100 µl **SiMAG-DNA** silica beads to the blood, vortex and incubate for 2-5 minutes at room temperature.

Tip: *Resuspended the magnetic beads completely before use by vortexing*

4. Place the tube on a magnetic separator for 30 seconds and collect the bead/DNA-pellet. Remove and discard the supernatant.

Tip: *Some of the solution with beads will end up in the cap of the tube. The tube can be tipped or turned upside down, while placed in the magnet, to wash down the beads trapped in the cap.*

5. Add 1 ml **Wash Buffer I** and vortex at room temperature. Collect the bead/DNA-pellet for 30 seconds with the magnet, remove and discard the supernatant. Repeat washing step **once**.

6. Add 1 ml **Wash Buffer II** and vortex for 5 seconds. Collect the bead/DNA-pellet for 30 seconds with the magnet, remove and discard the supernatant. Repeat washing step **once** with **Wash Buffer III**.

Attention: *Wash Buffer III and Elution Buffer is same, therefore during the wash process vortex for 1 second.*

7. Add 100 µl **Elution Buffer (ddH_2O)**, vortex and incubate for 10 minutes at 60 °C in a thermo-mixer and vortex the tube from time to time for the complete resuspension of the pellet.

Tip: *Complete resuspension of the pellet is important to recover high yields of DNA. Repeat mixing (vortex) during the incubation step.*

8. Collect the beads with the magnet and transfer the solution with the eluted DNA to a new clean tube. If the solution is not clear repeat the step.

Tip: *The isolated DNA can be stored at 2-8 °C in a refrigerator, but for a long term storage - 20 °C is recommended.*

Protocol 2

This protocol describes the isolation of DNA from 10^6 cultured cells. The reagents can be scaled up or down pro rata.

1. Suspend 10^6 cells in 100 µl TE Buffer pH 7,4 - 8,0.

→ Then continue with the steps 1 - 8 from Protocol 1

Trouble - Shooting

1. Eluted DNA is coloured or contaminated

If the eluate is colored increase the **Lysis & Binding Buffer** volume (step 2).

2. Low yield

a) The DNA is not completely eluted from the magnetic beads. Repeat the vortexing and place the tube in a thermo-mixer at 60 °C. The bead/DNA pellet must be resuspended for a complete DNA elution.

b) The magnetic beads are not completely resuspended before adding to the lysate (step 3). Therefore too low particle concentration for binding of DNA. Vortex the SiMAG-DNA silica particles and resuspended the particle sediment completely.

3. A260/A280 ratio is too low

a) The bead/DNA-pellet was incubated too shortly in the Wash Buffer I (step 5), incubate for 5 minutes and shake or vortex the bead/DNA pellet from time to time.

b) Incomplete separation of the magnetic particles from the eluate can increase the background of UV measurement. Repeat magnetic separation and transfer eluted DNA to a clean tube.

4. Precipitate in the reagent bottle

Bottels stored below room temperature. Warm reagent bottle in water bath to redissolve precipitate.

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