

chemagic Magnetic Separation Module I

Automated Nucleic Acid Isolation

Based on proprietary M-PVA Magnetic Bead technology. Your complete solution for DNA/RNA-preps from blood, serum/plasma, tissue, bacteria, food, plants.....



NEW!

Now available with
chemagic 24 Rod Head



Extracted nucleic acids routinely applied for e.g.:
genotyping virus detection GMO testing forensics HLA typing



enhanced success rates for your
downstream applications

one instrument for all sample volumes (10 μ l – 10 ml)

12 large volume samples < 45 min

24 medium volume samples < 45 min

96 low volume samples < 15 min

chemagic Kits for a huge variety of sample materials

it's chemagic!

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Classical methods of DNA and RNA isolation are based on column or precipitation methods. These techniques require centrifugation or vacuum steps and often have lengthy processing times as well as volume limitations, complicating their integration into automated high throughput processes. Additionally, the automated processing of these methods may cause cross contamination of the purified nucleic acids making them useless for many diagnostic purposes.

Sample preparation using chemagen's chemagic Kits are carried out quickly. No centrifugation steps are employed. Due to the high magnetite content of the particles, isolations from both, very small (10 µl) and very large (10 ml) sample volumes, are easily accomplished. Additionally, the low unspecific binding properties of the matrix ensure the isolation of highly pure nucleic acids from crude samples and critical sample materials. The isolated products can be used directly in a variety of downstream applications.

While screening the existing technologies chemagen identified and solved the following obstacles of automated nucleic acid separation:

restricted working volumes
chemagen: fully scalable

limited to special reaction vessels
chemagen: all standard vessels

high throughput applications cannot be realized
chemagen: up to 4,000 samples/d

additional high costs of disposable
chemagen: transparent costs

Another problem of alternative instruments is the ineffective resuspension of the magnetic bead pellets during washing and elution steps. This obstacle results in lower yields and purity of the separation product. To overcome the disadvantages of currently available instruments for automated nucleic acid isolation, chemagen, in collaboration with the Forschungszentrum Karlsruhe GmbH, has developed a novel module which eliminates automation obstacles.

The **chemagic Magnetic Separation Module I** achieves magnetic separation through the use of an electromagnet (A) and magnetisable and rotatable rods (B), which are immersed into the magnetic bead suspension. With this technology, separated particles can be easily resuspended in the chemagic buffers by switching off the electromagnet and rotating the rods at e.g. 2,000 rpm. Thereby the normally difficult resuspension is very fast and thorough, resulting in high yields and purities.

The **chemagic Magnetic Separation Module I** can be used with exchangeable heads (C) which allow the processing in 96- or 48-well-plates using a head with 96 magnetizable rods, in 24-well-plates using a head with 24 rods or in larger tubes (working volumes up to 50 ml) using the chemagic 12 Rod Head. The resulting flexibility makes it possible to meet individual requirements for special applications. Apart from its use as a stand-alone instrument, the Module can be combined with standard liquid handling units.



Technical Specifications

Head	96 magnetizable rods	24 magnetizable rods	12 magnetizable rods
Formats	96-, 48- or 24-well plate	24-well-plates or 24 single tubes	12 tubes (e.g. 50 ml)
Throughput	e.g. 4,000 samples/d	e.g. 288 samples/d	e.g. 144 samples/d
Sample volume	e.g. 10 µl - 1.5 ml blood	e.g. 200 µl - 2.0 ml blood	e.g. 0.5 ml - 10 ml blood
Processing time	< 15 min for 96 blood samples	< 45 min for 24 blood samples	< 45 min for 12 large blood samples
Power supply	90 - 240 V; 16 A; (50/60 Hz)		
Dimensions [mm]	Base machine: 600 x 640 x 950 (W/D/H), Carrier axis: 1940 x 170 x 200 (W/D/H)		

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