For general laboratory use.

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MagNA Lyser Green Beads

Version: 07
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Cat. No. 03 358 941 001 100 tubes
prefilled with ceramic beads

Store the kit at +15 to +25°C.

1. General Information

1.1. Storage and Stability

Storage Conditions (Product)

Store and use this product at +15 to +25°C.

1.2. Additional Equipment and Reagents Required

- MagNA Lyser Instrument
- MagNA Lyser Rotor Cooling Block (additional cooling block for increased throughput)
- MagNA Lyser Rotors (two additional rotors for increased throughput)
- MagNA Pure LC 2.0 Instrument (nucleic acid purfication robot for up to 32 samples)
- MagNA Pure Compact Instrument (nucleic acid purfication robot for up to 8 samples)

1.3. Application

For general laboratory use
For the homogenization of solid sample material
MagNA Lyser Green Beads are supplied in 2-ml screw-capped tubes, prefilled with 1.4-mm (diameter) ceramic beads. These tubes are specifically designed for use with MagNA Pure LC lysis buffers (for isolating DNA or RNA) and the MagNA Lyser Instrument to quickly and completely homogenize a variety of solid cellular sample materials, such as bacteria, fungi, and animal and plant tissues and cells.

2. How to Use this Product

2.1. Before you Begin

Sample Materials

Animal tissue and cells, plant tissue and cells, bacterial cells, yeast, and other solid cellular sample materials when using the provided tubes pre-filled with MagNA Lyser Green Beads and the appropriate lysis buffer from the MagNA Pure LC DNA, RNA, or total nucleic acid isolation kits.

General Considerations

The MagNA Lyser Green Beads product provides 100 tubes prefilled with beads for homogenizing sample material
The benchtop MagNA Lyser Instrument uses the 2 ml-capacity tubes containing MagNA Lyser Green Beads to mechanically disrupt cells, tissues and other biological materials using the lysis buffers found in the MagNA Pure LC and MagNA Pure Compact DNA, RNA, mRNA or total nucleic acid isolation kits.
The ceramic beads quickly homogenize bacteria, fungi, mammalian and plant tissue, and all cell types to produce a supernatant containing stabilized nucleic acids and proteins suitable for subsequent purification, extraction or analysis using either the MagNA Pure LC 2.0 Instrument or the MagNA Pure Compact Instrument.

During a MagNA Lyser instrument run, the rotor, which is loaded with the special 2-ml tubes containing the green ceramic beads (*i.e.*, MagNA Lyser Green Beads), rapidly oscillates. Instrument oscillations agitate and mix the ceramic beads, cell material and lysis buffer up and down at extremely high speed with a slight twisting motion. Cells in the sample tubes are instantaneously disrupted as they collide with the beads in the presence of the lysis buffer. The effectiveness of the disruption process is determined by both the rate of collision and energy of impact, and the chemistry of the lysis buffer. Both the speed of the instrument's oscillation acting on the specific gravity of the beads, and the duration of the MagNA Lyser run are variable to ensure optimal disruption of a wide variety of cells and tissue types. Please refer to the pack insert of the specific MagNA Pure LC or MagNA Pure Compact DNA, RNA and mRNA isolation kits for tissues (see below) for recommended MagNA Lyser speed settings and run-times.

MagNA Lyser Green Beads should be used with Lysis Buffers for either the MagNA Pure LC or MagNA Pure Compact Instruments
The following dedicated nucleic acid purification kits and separate lysis buffers for tissues and solid sample materials are available for the MagNA Pure LC Instrument:

- MagNA Pure LC DNA Isolation Kit II (Tissue), 192 reactions, 1 to 10 mg Tissue
- MagNA Pure LC DNA Isolation Kit III (Bacteria, Fungi), 192 reactions, Bacteria, Fungi, 50 to 100 µl
- MagNA Pure LC RNA Isolation Kit – High Performance, 92 reactions,
- MagNA Pure Compact Nucleic Acid Isolation Kit I - Large Volume, 32 reactions, 1 to 10 mg Tissue
- MagNA Pure LC RNA Isolation Tissue Lysis Buffer - Refill
- MagNa Pure DNA Tissue Lysis Buffer
- MagNA Pure LC Total Nucleic Acid Isolation Kit - Lysis/Binding Buffer Refill
- MagNA Pure LC DNA Isolation Kit I – Lysis/Binding Buffer – Refill
- MagNA Pure Bacteria Lysis Buffer

Safety Information

Handling and Safety Information

Be sure to use the amounts of sample material and lysis buffer specified in the pack inserts of the respective MagNA Pure LC Isolation Kits. Refer to the MagNA Lyser Operator's Manual for a detailed description of the system. Please follow the safety instructions for using the lysis buffers in the pack insert of the MagNA Pure LC isolation kit. Lysis buffers, bacteria, fungi and plant and animal tissues should be treated according to standard laboratory procedures for infectious material.

2.2. Protocols

Workflow overview

1. Place the rotor on the MagNA Lyser Cooling Block.
   Insert up to 16 sample tubes containing ceramic beads, tissue and lysis buffer into the rotor.

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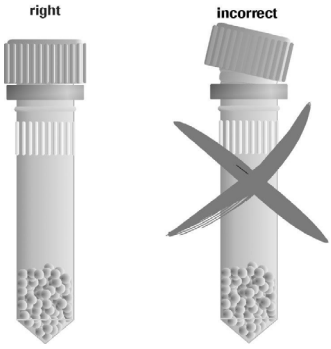
2. Add the sample and lysis buffer to the MagNA Lyser Green Beads.
   – Ensure that the O-Ring is correctly inserted in the cap.
   – Do not overtighten the threads.
   – Make sure that the caps align correctly with the tubes (see below).



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3. Place the rotor into the instrument and secure it with the retention plate. All three screws must be lightened.

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4. Homogenize the sample material according to the MagNA Lyser Operator's Manual.

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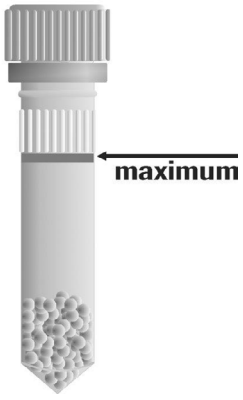
5. Centrifuge the sample to pellet the cell debris, then proceed with nucleic acid preparation using the supernatant.

The volume must never exceed the filling level shown in pack insert. If the filling level is exceeded the sample material can leak out during the MagNA Lyser run.

filling level



3. Additional Information on this Product

3.1. Test Principle

The MagNA Lyser Instrument is a benchtop device, that in combination with MagNA Lyser Green Beads and lysis buffers found in either MagNA Pure LC and MagNA Pure Compact isolation kits, automatically disrupts cells or other biological materials. The instrument facilitates the production of a supernatant containing nucleic acids and proteins suitable for subsequent purification, extraction, or analysis. The MagNA Lyser Instrument is to be used exclusively by laboratory professionals trained in laboratory techniques using the instructions provided in the MagNA Lyser Operator's Manual.

The principle underlying cell disruption is the fast moving, oscillating reciprocal motion of the MagNA Lyser Instrument Rotor holding sample tubes containing ceramic beads, tissue, and lysis buffers. This rapid disruptive motion provides optimal conditions for homogenizing mammalian tissue, plant tissue, bacterial cells, yeast, or other cellular material. There is no need to use additional lysing enzymes or mechanical grinding tools.

Cellular homogenization during a MagNA Lyser Instrument run is caused by the collision of ceramic beads with tissue and cells in the presence of the appropriate lysis buffer. Both the rate of collision and energy of impact determine the effectiveness of the disruption process. Variable instrument speed and run time settings permit the appropriate amount of homogenization required for a specific application. Please refer to the package insert of the specific MagNA Pure LC or MagNA Pure Compact DNA, RNA, and mRNA isolation kits from tissues for recommended MagNA Lyser speed settings and run times.

4. Supplementary Information

4.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

Text convention and symbols	
Information Note: Additional information about the current topic or procedure.	
Important Note: Information critical to the success of the current procedure or use of the product.	
① ② ③ etc.	Stages in a process that usually occur in the order listed.
❶ ❷ ❸ etc.	Steps in a procedure that must be performed in the order listed.
* (Asterisk)	The Asterisk denotes a product available from Roche Diagnostics.

4.2. Changes to previous version

Layout changes.
Editorial changes.

4.3. Ordering Information

Roche offers a large selection of reagents and systems for life science research. For a complete overview of related products and manuals, please visit and bookmark our homepage lifescience.roche.com.

Product	Pack Size	Cat. No.
Instruments		
MagNA Lyser Instrument	1 instrument, 110 V, 110 V	03 358 968 001
	1 instrument, 220 V, 220 V	03 358 976 001

4.4. Trademarks

MAGNA LYSER and MAGNA PURE are trademarks of Roche.
All third party product names and trademarks are the property of their respective owners.

4.5. License Disclaimer

For patent license limitations for individual products please refer to: http://technical-support.roche.com.

4.6. Regulatory Disclaimer

For general laboratory use.

4.7. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

4.8. Contact and Support

If you have questions or experience problems with this or any Roche product for Life Science, please contact our Technical Support staff. Our scientists are committed to providing rapid and effective help.
Please also contact us if you have suggestions for enhancing Roche product performance or using our products in new or specialized ways. Such customer information has repeatedly proven invaluable to the research community worldwide.

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