analytikjena

SpeedMill PLUS

Powerful and high efficient homogenizer

- Efficient sample cooling during the whole preparation
- Flexible homogenizing system for various starting materials
- Big display and comfortable touch controlling for easy operation

Life Science unlimited

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Powerful and high efficient homogenizer

Homogenizer for various starting materials

The SpeedMill PLUS is a highly efficient homogenization system for various starting materials used for the subsequent isolation and purification of DNA, RNA or proteins. The homogenization process is based on an innovative mechanical principle for which a patent has been filed. This new process allows users to operate the SpeedMill PLUS continuously if necessary.

Efficient sample cooling: prior, during and after preparation

For the novel sample holder, which is used inside the SpeedMill PLUS, different temperature ratings are freely selectable due to the storage down to –40 °C. According to this an efficient sample cooling during the whole homogenization process is warranted and the substantial sample warming that occurs with other homogenizers is prevented. The often problematic handling of liquid nitrogen or dry ice is thus a thing of the past. Additionally the considerably expense factor of this additives, which have to be loaded continuously, is not applicable. Besides the sample holder allows an easy transport of the sample tubes and a long term storage of starting or homogenized material at adequate temperatures.

Exchangeable sample adapters enable an easy sample handling

Features

- Entire and reproducable homogenizing
- Efficient sample cooling during the whole preparation
- Flexible homogenizing system for various starting materials
- Broad portfolio of Lysis Tubes enables individual extensions of your homogenizing system
- Big display and comfortable touch controlling for easy operation
- Pre- installed or user-defined protocols
- Double Action Technology enables highly efficient energy entry
- Homogenizing comparably low-noised

Modern preparation of samples: SpeedMill PLUS

The samples to be processed are rapidly and efficiently homogenized in Lysis Tubes that have been specially optimized for the system and, as such, contain different and application-specific beads. Using beads makes it possible to completely and reproducibly homogenize even the toughest starting materials, such as cartilage and chitin shells of insects or ticks with a very short time. 2.0 ml and 0.5 ml containers (Lysis Tubes) with different beads are available for sample preparation, allowing users to adapt sample processing to a diverse range of soft and hard starting materials. Operating processes, such as loading and removing of the sample tubes, are very simple and no tools are required. In addition user-defined protocols can be entered and saved as well as pre-installed programs are available. Homogenization parameters, like time and using cyclic routines are freely selectable.

Optimized extraction kits for the homogenizers

For the homogenizer, e.g. SpeedMill, also accommodates kits for complete nucleic acid (DNA and RNA) isolation from various starting materials. All kits have been optimized for the SpeedMill for extremely fast and efficient nucleic acid isolation. The yields produced are impressively high and the quality of the isolated nucleic acids is outstanding. These kits contain special Lysis Tubes with application-specific beads as well as pre-made buffers. They also contain all other components needed for isolating DNA or RNA from different starting materials. Optimized kits for sample processing with the SpeedMill results in extremely rapid and highly efficient nucleic acid isolation. Both the yield and quality of the nucleic acids are excellent. The standard isolation protocol requires only about 20 to 30 minutes.

Nucleic acid extraction principle

DNA isolation: Mechanical disruption of the starting material is followed by a proteolytic lysis step. The genomic DNA is adsorbed onto a Spin Filter, washed and then eluted. The yield and quality of the DNA are excellent.

RNA isolation: After the mechanical disruption and denaturation of the starting material, genomic DNA is removed by adsorbtion onto an initial Spin Filter. The RNA is then adsorbed onto a second Spin Filter, followed by a wash step and finally by elution of the RNA.

Technical data

System parameters	
Homogenization time	30 sec to 4 min (depending on the starting material)
DNA/RNA purification time	20 – 30 min for standard protocols (complete nucleic acid purification)
Device handling	Stand-alone device, simple starting and handling of device by using modern touch sensors
Acceleration time	No acceleration
Deceleration time	No deceleration

Application parameters	
Homogenization routines	User-defined programming with user-defined parameters, as well as pre-programmed protocols
Sample handling	Simple sample tube loading and removal
Sample capacity	Up to 12 samples simultaneously
Aluminium sample adapter "standard"	Specific heat capacity: 0.9 $J(g \cdot K)^{-1}$ / Enables passive cooling
PA 66 sample adapter "cooling"	Specific heat capacity: 1.7 $J(g \cdot K)^{-1}$ / Enables passive cooling

Programming parameters	
Homogenization time range	1 sec to 4:59 min
Steps of adjusting time	1 sec
Pre-programmed protocols	Yes
User-defined protocols	Yes
Storable protocols	20
Number of cycles	1 – 99
Protocol steps	1 – 6

Accessories	
Lysis Tubes	Broad ranged portfolio of chooseable Lysis Tubes with various volumina and beads
Complete purification	innuSPEED Kits containing Lysis Tubes for standardized starting materials enable effective extraction of nucleic acids without previous homogenizing optimization

Other technical data	
Dimensions (W × H × D)	154 × 275 × 257 mm
Weight	12 kg
Power Supply	AC 220 V, 50 Hz/110 V, 60 Hz
Power consumption	150 W (max)
Warranty	2 years

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