NucleoCube - Designed for Your Protocols

Key Features

- **High-Throughput Magnetic Beads Extractor**

Processes from 1 up to 96 samples without any protocol modifications, making it an efficient solution for laboratories of all sizes.

- **Efficient Linear Movement**

Reduced workflow complexity enables time-efficient protocols, requiring only 20-30 minutes for DNA/RNA extraction.

- **Customizable Protocols**

Open solution with user-editable and stored on microSD cards.

- **Integrated UV Lamp**

Ensures a contamination-free environment for reliable and consistent results.

- **Temperature Control**

From room temperature up to 90°C with ±1°C accuracy.

- **Operation Logbook**

Automatic record of protocols, user data, and barcodes guarantees complete traceability.

- **Compact**

Top bench solution with reduced dimensions ideal for optimizing lab space.

- **Tailored Design**

Possibility to add thermo-blocks, additional positions, or dedicated modules.

User interactions

- **Barcode Reader (EAN 128)**
- **User Identification** for Enhanced Traceability
- **5-inch Color Touchscreen** for intuitive and user-friendly control.

Technical Specifications

- **Test Principle**: Magnetic Beads Method.
- **Volume Range**: 30 μl - 1000 μl.
- **Maximum Input Power**: 180 W.
- **Network Connectivity**: Optional LIMS integration.
- **Dimensions**: 61 cm × 47 cm × 47 cm and a weight of 25 kg.

Made in Europe Consumables

We supply all the essential consumables for your NucleoCube, including:

- **Tip Comb**
- **96 Deep Well Plates**
- **Elution Plates**

All are manufactured locally in Europe with a focus on quality, reliability, and sustainability.

Why Choose NucleoCube?

NucleoCube was originally developed in response to the SARS-CoV-2 pandemic, addressing the urgent need for efficient nucleic acid extraction. Since then, it has evolved to become a versatile and reliable tool for modern labs.
Its **customizable design, including hardware and firmware options**, ensures that it can adapt to your specific requirements. At Biocubik, we aim to support your work by offering a device that combines precision, efficiency, and flexibility.

Applications

The NucleoCube is suitable for a wide range of applications, including:

- Nucleic Acid Extraction and Purification for Molecular Biology Research
- Diagnostics and Veterinary Laboratories
- Agricultural Genomics

- Protein Studies

References & Collaborations

- **Baby Detect - Newborn Screening program:**
  - Newborn Screening (NBS) programs represent a fundamental support for a healthy start of life worldwide. Thanks to technological advancements, the number of genetic targets being screened is rapidly increasing, and Next Generation Sequencing (NGS) technologies have become a pivotal tool to keep pace with this growth.
  - One of the main challenges in integrating NGS technologies into routine practice is the implementation of a cost- and time-effective, reliable, high-throughput nucleic acid extraction method from Dried Blood Spots (DBS) to handle the thousands of newborns screened in NBS facilities.
    Baby Detect (https://babydetect.com), integrated into the official NBS laboratory at CHU of Liège (Belgium), addresses these challenges daily to screen more than 120 genetic diseases in NGS offering tested newborns a healthier start in life.
  - NucleoCube not only maintained the DNA high-quality standards required, but also improved Baby Detect's laboratory efficiency by reducing the extraction time from 12 hours to just 3 hours (2 hours incubation, 30 minutes extraction protocol). Additionally, it minimized plastic waste by using only 5 x 96-well plates to process 96 samples.

- **Roboscreen Gmbh - Hepatitis Delta Virus Molecular Diagnostic:**
  - Hepatitis Delta Virus (HDV) is endemic in different regions worldwide such as: Sub-Saharan Africa, Central and East Asia, Middle East, and Eastern Europe and the Mediterrean area. If compared to the clinics of other Hepatitis viruses, the HDV infection causes the most severe liver disease and the quantification of the pathogen in the blood plays a key role in the treatment of the patients.
  - The main challenge in molecular diagnostics of microorganisms in blood, plasma, and other biological fluids is achieving high test sensitivity, which directly depends on extraction efficiency.
    Roboscreen Gmbh (https://www.roboscreen.com/) offers its "RoboGene HDV Quantification Kit" coupled with the manual kit "INSTANT Virus RNA/DNA Kit", providing the CE-IVD certified system with the higher sensitivity on the market.
  - NucleoCube's open configuration allowed Roboscreen's team to easily adapt their "INSTANT Virus RNA/DNA Kit" maintaining the highest sensitivity on the market while improving traceability, result consistency, and standardization across the laboratories.

- **NEXUS Project - Extracellular Vesicles Purification:**
  - Extracellular Vescicles (EVs) analysis is a rising star in the field of Liquid Biopsy. Indeed, increasing evidence shows that these particles, present in different biological fluids, can effectively reflect the physiological or pathological state of specific organs or cell types—potentially eliminating the need for invasive sampling methods.
  - So far, the purification of EVs is remains largely limited to non-specific methods such as size exclusion chromatography or ultracentrifugation-based protocols, while the selection of specific EV subtypes is primarly performed manually through immunoprecipitation.
    NEXUS Project (https://www.scitec.cnr.it/en/projects/ls-pj/lf-pj39), based at SCITEC in Milan, is developing an automatic solution for the purification and selection of EVs aiming to deliver a standardized, high-throughput, and cost-effective system that will pave the way for future diagnostic applications.
  - NucleoCube provided the easy, cost and time-effective solution to automatize their manual protocol for purification and selection of specific EVs in plasma that Nexus Project needed. Moreover, along with the traceability amelioration and the throughput increase essential for the project, the automatization of the manual protocol even ameliorated the efficiency of purification up to 50% in terms of EVs/ml of plasma.

Contact Us

We'd love to discuss how the NucleoCube can support your work.

For more information, please get in touch:

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