

The microfluidic LabTube platform

Assay automation in laboratory centrifuges

The LabTube is an innovative microfluidic cartridge for the automation of sample preparation assays using laboratory centrifuges.

Microfluidic lab-on-a-chip platforms allow the miniaturization, automation and integration of liquid handling. As a major drawback, however, the majority of lab-on-a-chip systems require highly specialized processing instruments, leading to high investment costs. With the LabTube platform we close this gap and present a system that uses a low-cost standard laboratory centrifuge as processing device.

The LabTube platform automates preparation of diverse samples by solid-phase extraction. The disposable LabTube cartridge has the size of a standard centrifuge tube (50 ml, 100 ml) and integrates elements for sample loading, reagent pre-storage and downstream processing of the reagents (e.g. mixing, valving, and incubation). The selective release and assay-specific processing of the reagents is achieved by a ball pen mechanism. The LabTube has successfully been demonstrated for human, bacterial and viral DNA extractions from human blood samples as well as protein purification



The LabTube cartridge and a table-top laboratory centrifuge as processing device.

Key features of the LabTube platform

- Safe use with low hands-on time
- User-friendly handling with no need for trained personnel
- Low-priced standard laboratory centrifuge as device
- Disposable injection-molded LabTube cartridge

Key features of the LabTube cartridge

- Automation of sample preparation (blood, swabs, plant lysates)
- Sample volumes up to 2 ml
- Up to 12 reagents can be pre-stored
- Parallelization of four to eight tests per run

from plant samples. Further applications are under development such as: point-of-care diagnostic of bacterial and viral infections from different samples. The LabTube platform offers the fast and secure automation of diverse assays using a laboratory centrifuge.

Would you like to apply your assay on the LabTube platform? If yes, or if you have further questions, do not hesitate to contact us.

We look forward to getting in touch with you!