

# The microfluidic LabTube platform

## Assay automation in laboratory centrifuges

**The LabTube is an innovative microfluidic cartridge for the automation of diagnostic tests and biological 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 an innovative cartridge that uses a low-cost standard laboratory centrifuge as processing device.

The LabTube has the size of a standard centrifuge tube and composes various elements for sample loading, reagent pre-storage and downstream processing of the reagents. The selective release and application-dependent processing of the reagents (e.g. mixing, valving, and solid-phase extraction) is achieved by a centrifugally driven ball pen mechanism.

The competitive functionality of the LabTube has successfully been demonstrated with human, bacterial and viral DNA extractions from human blood samples as well as protein purification from plant samples. Further

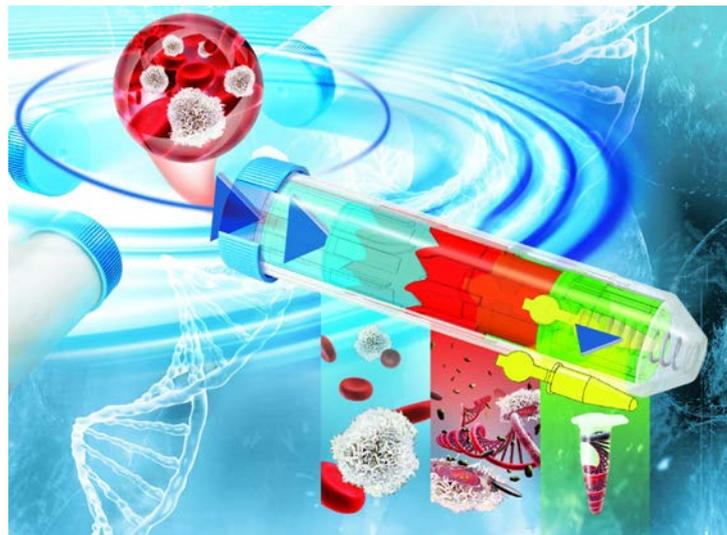


Figure: Schematic presentation of the LabTube.

### Key features

- The LabTube is processed by a **low-cost** laboratory centrifuge.
- The **disposable** LabTube cartridge is manufactured by injection molding and therefore compatible with **mass fabrication**.
- The assay procedure is **automated** by a centrifuge-triggered ball pen mechanism.
- The **hands-on time is low** and limited to sample input only.
- The LabTube procedure is **secure** and prevents the risk of contaminations.
- The **handling is easy** and **user-friendly** with no need for trained personnel.

applications are under development such as: the fully integrated point-of-care diagnosis of bacterial and viral infections from different sample material; the analysis of waste and drinking water for bacteria; or the detection of human pathogens from food samples.

The LabTube platform offers the fully integrated, fast, secure and

low-cost automation of diverse laboratory processes.

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

We are looking forward to get in touch with you!