Visions to Products

# Digital nucleic acid assays with standard laboratory devices

## Centrifugal micro droplet generation

**Digital nucleic acid analysis offers absolute quantification with high precision. We have implemented the workflow of digital analysis on standard laboratory devices.**

Most of the existing digital amplification techniques are time consuming, requiring large and costly instruments and multiple handling steps. The use of centrifugal droplet generation excels existing techniques by minimal hands-on time for the droplet generation and amplification (2 pipetting steps).
With the LabSlide, the droplet generation proceeds within <2 min producing 60,000 individual homogeneous droplets. The droplet chemistry is compatible with multiple amplification techniques, such as RPA, HDA, LAMP, or PCR.
Using our LabSlide consumable, droplet generation can be performed with a standard mini centrifuge. For amplification, the LabSlide can be processed in *in situ* PCR thermocyclers or incubators for isothermal amplification. Due to the objective slide format of the LabSlide, standard microarray scanners or fluorescence microscopes can be used for the readout of the fluorescent droplets.

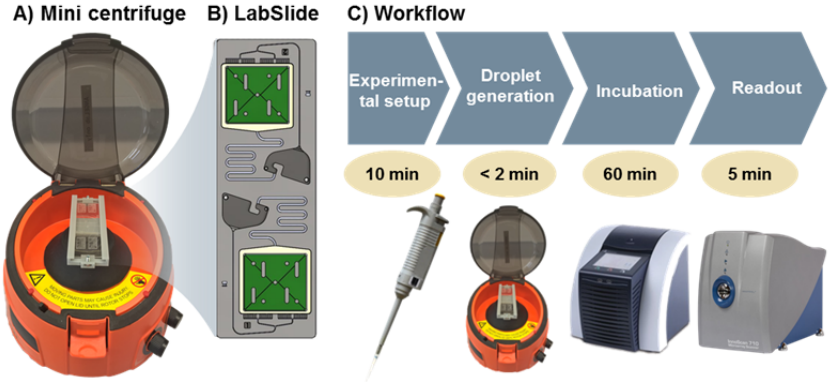


**Fig. 1** LabSlide and workflow of digital nucleic acid assays with standard laboratory devices.

This enables fast and easy processing of digital assays. The main advantage is the possibility to quantify without the need for external standards.

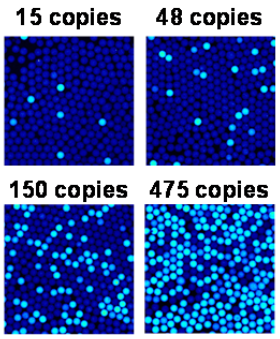


**Fig. 2:** Result of ddLAMP with different DNA concentrations. Positive droplets are light blue.

### Innovation

- Use of standard laboratory devices for digital nucleic acid assays
- Only two pipetting steps required
- Compatible with RPA, LAMP, HDA, and PCR
- Minimal dead volume

### Possible applications

- Cancer diagnostics and monitoring
- Single cell applications
- Non-invasive prenatal diagnostics
- Sepsis diagnostics
- HIV diagnostics and monitoring


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