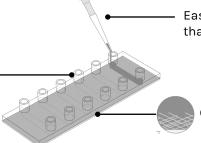
# Chitozen

### Image bacteria in 2D

**Chitozen** is composed of chitosan-coated coverslips allowing immobilization and observation of live bacteria under the microscope, without altering their physiology.

Microfluidic channel sticky-slide, sticked to the chitosan-coated coverslip.



Easy bacterial loading and medium-change, thanks to the channels

Chitosan-coated coverslip

### Key features

#### 1. High adherence

Maintains bacteria in a similar focal plane for imaging.

#### 2. Preserves cell physiology

The chitosan coating is free from bacteriostatic effects and does not affect bacteria geometry.

#### 3. Perfusable

Change the medium or add compounds throughout experiment to assess real-time changes in bacterial behavior.

#### 4. Time-saving

Test up to 6 parallel conditions on one slide.

#### Multiple microscopy techniques compatible:



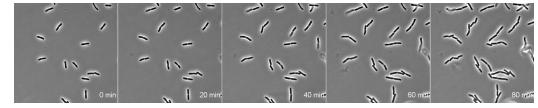
- Phase-contrast
- Epifluorescence
- Confocal
- Super-resolution microscopy
- Atomic force microscopy (AFM)

#### Results

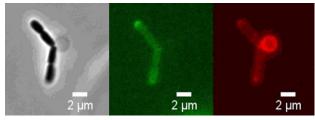
#### Growth and division of E. Coli on Chitozen

In LB medium, for 80min.

Image credit: Amandine Desorme, LCB, CNRS, 2021



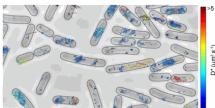
## Observation of vesicles at septum during cell division of mutant E. coli using Chitozen



E Coli strain: W3110  $\Delta tolR$  – Palmcherry), in LB ½ medium. Peptidoglycan is labeled with the green fluorophore BADA.

Image credit: Amandine Desorme, LCB, CNRS, 2021

### Tracking of DNA repair proteins in live cells of Escherichia coli, with TIRF



5 Cells expressing HaloTagged DNA repair proteins were loaded onto the chitosan-coated coverslip and imaged with TIRF microscopy. The Chitozen technology enables tracking single-molecules while changing environmental conditions.

Image credit: Maxence Vincent , University of Oxford, 2022

