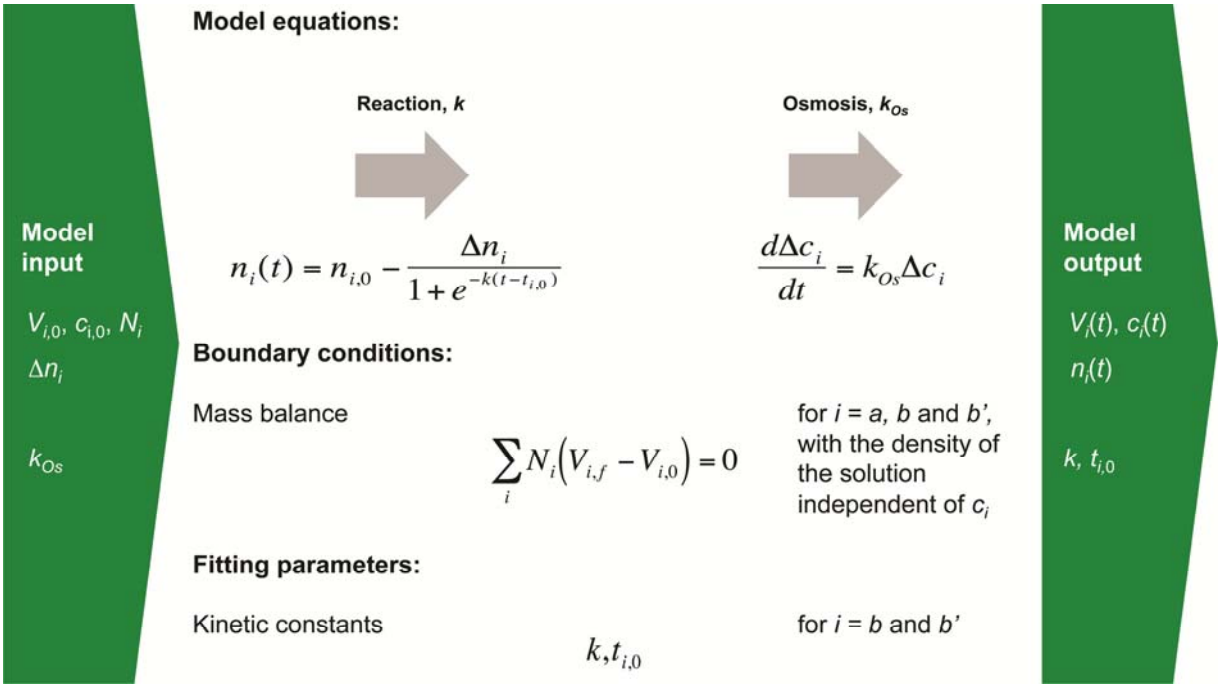
Supplement



Supplementary Fig.1: Schematic of the model. The osmotic process is modeled as $d(\Delta c) / dt = k_{Os} \times \Delta c$, the reaction or activity changing the solute concentration is modeled as a basic sigmoid function. The sigmoid function accounts for the plateau when reaching equilibrium and for increasing activity at the beginning, similar to the yeast growth curve observed in bulk.

Electronic Supplementary Material (ESI) for Lab on a Chip

Supplementary Movie: Yeast-induced droplet shrinkage

A significant size change of droplets is induced by metabolic activity of encapsulated yeast cells. Total time of observation is 16h; scale bar shown on first frame, 30 µm.

Keywords: Microdroplet, cell encapsulation, osmosis, droplet-based microfluidics, droplet shrinkage, droplet sensor, label-free