Polymer microgels as nucleoid mimics for bacterial cell devision

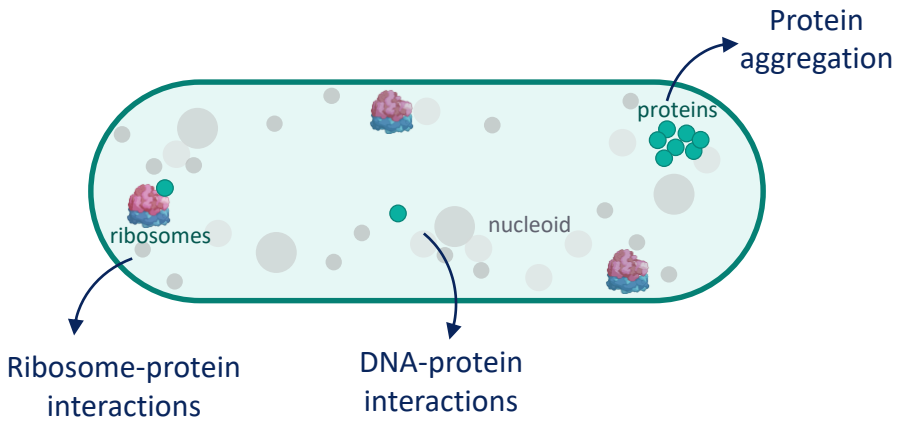
Background

Mimicking bacterial cell division is one important research topic in synthetic biology for the construction of artificial cells. So far it has been studied in solution and vesicles. We aim to investigate how polymer microgels can be used to mimic the nucleoid region of bacteria. The coupling of individual proteins of the cell devision machinery to these microgels will be studied in order to understand their interactions.

Tasks and methods

- Synthesis of functional polymer precursors
- Production of polymer microgels
  - Droplet microfluidics
- Coupling of bacterial proteins to polymer microgels
- Detection of fluorescently labeled proteins
  - (Confocal) fluorescence microscopy

In vivo



Reconstructing of a bacterial cell

Nucleoid	Microgel
Consists of DNA, RNA and structural proteins	DNA-functionalized microgels

Wir freuen uns auf eure Rückmeldung!
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