

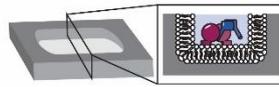
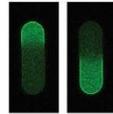
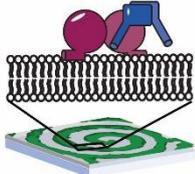
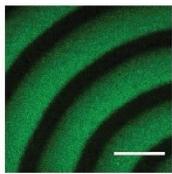
Interested in Biochemistry and Biophysics?

The department for Cellular and Molecular Biophysics (Prof. Petra Schwille) at the Max Planck Institute of Biochemistry (Campus Martinsried/Großhadern) is offering projects for a **Master's thesis** and/or **student assistants**.

***In vitro* reconstitution of self-organizing systems**

Background	The MinCDE system oscillates from cell pole to cell pole in <i>E.coli</i> , thereby defining the middle of the cell, where the cell will divide. The E.coli MinDE system can be reconstituted <i>in vitro</i> . When the two proteins MinD and MinE are incubated on a model membrane with ATP they self-organize and form patterns and travelling waves. Our group has employed this assay to gain greater understanding of the self-organization of MinDE
Goal	We would like to employ the approach used for the MinDE system to other self-organizing systems found in bacteria, such as the ParABS system.
Your benefits	In the course of this project, you will learn how to design, clone, express and purify proteins. You will learn how to make model membranes and perform the reconstitution assay using confocal fluorescence microscopy. Furthermore you will employ a variety of biochemical/biophysical methods to characterize the proteins (ATPase assay, binding assays,...)

The E.coli MinDE system reconstituted *in vitro*.



MinDE on planar supported lipid bilayers. MinDE in microchambers.

In the best case you...

- are motivated and interested in biophysical methods & questions
- have already some experience in protein purification
- have good English skills

In return, we offer excellent working conditions in an international research group with friendly and helpful colleagues.

If you are interested, please send an informal mail to Beatrice (ramm@biochem.mpg.de) and we can discuss the possible projects or tasks in more detail.

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