



Announcement

Cellular Biophysics

Description

The cell is the smallest living unit in the body. It fulfils a variety of specialized functions and interacts with the environment. Classically, biochemical interactions with the environment by soluble factors like hormones are considered. However, also physical parameters like stiffness or shape play an important role. Goal of the lecture is to highlight these physical triggers of cell function.

Content

- The cell as a composite material: structure and function of the cytoskeleton
- Influence of cell shape on cell function
- Mechanosignalling: Influence of substrate rigidity on cell function and mechanics
- Measurement of cell mechanics: atomic force microscopy and microrheology
- Measurements of cellular forces: Traction Force Microscopy

Prerequisites

Formal prerequisites: none

Recommended prerequisites: Fundamentals of biophysics

Additional Information

Lecture, 2 hours weekly

3 ECTS credits

Written exam

Lecturer

Prof. Gottschalk, Institute of Experimental Physics