New Colloquium Series

Zentrum für Biophysik
Center for Biophysics

ZBP

UNIVERSITÄT DES SAARLANDES

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TU Dresden

ZBP Colloquium, Thursday, June 05, 2025

Gliding Motion of Diatoms: Of Motors, Filaments and Complex Motility Patterns

Diatoms are one of the few eukaryotic organisms capable of gliding motility, characterized by rapid movement and quasi-instantaneous directional reversals. While previous models have proposed an actomyosin system as the force-generating mechanism, direct evidence for the involvement of actin and myosin in diatom gliding has been lacking. Additionally, the ability of rigid-walled diatoms to dynamically reorient and navigate complex environments has remained poorly understood. Here, we show that raphe-associated actin bundles, essential for diatom gliding, do not exhibit directional turnover, indicating that actin dynamics are not directly involved in force generation. Instead, we identify four raphid diatom-specific myosins (CaMyo51A-D) in Craspedostauros australis through phylogenomic analysis. Of these, only CaMyo51B-D demonstrate coordinated movement during gliding, highlighting their role in force production.

https://tinyurl.com/zbp-diez20250605

Talk: 14:15
Tea/Coffee at 14:00
Campus Saarbrücken
Building C6.4
Room 0.09 (Lecture Hall II)

Schedule with full abstract

Teams link