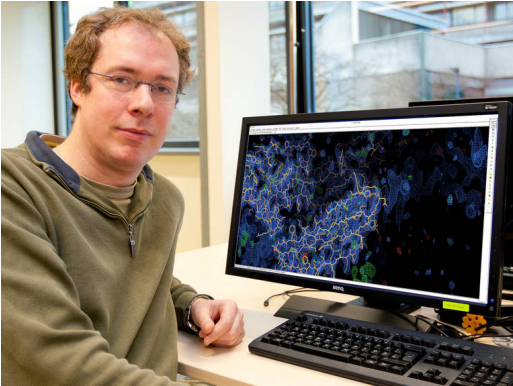


SFB 924-/BZR – Kolloquium

Dienstag, 12. September 2017

17:00 Uhr, H 53



Prof. Dr. Thomas Krey

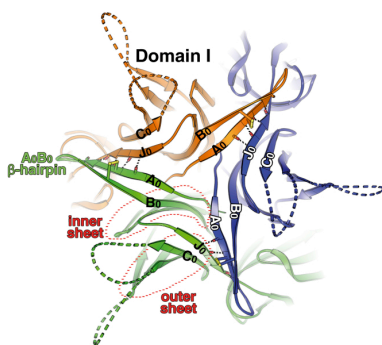
Institut für Virologie

Medizinische Hochschule Hannover

Structural basis of gamete fusion

Sexual reproduction is almost universal in eukaryotic life and involves the fusion of male and female haploid gametes into a diploid cell.

The sperm-restricted single-pass transmembrane protein HAP2/GCS1 has been postulated to function in membrane merger. Its presence in the major eukaryotic taxa (animals, plants, and protists) suggests that many eukaryotic organisms share a common gamete fusion mechanism.



Thomas Krey will report about combined bioinformatic, biochemical, mutational, and X-ray crystallographic studies on the unicellular alga *Chlamydomonas reinhardtii* HAP2 that reveal homology to class II viral membrane fusion proteins (1).

Targeting the segment corresponding to the fusion loop by mutagenesis or by antibodies blocks gamete fusion. These results demonstrate that HAP2 is the gamete fusogen and suggest a mechanism of action akin to viral fusion, highlighting the impact of virus-cell genetic exchanges on the evolution of eukaryotic life.

(1) Fedry J, Liu Y, Pehau-Arnaudet G, Pei J, Li W, Tortorici MA, Traincard F, Meola A, Bricogne G, Grishin NV, Snell WJ, Rey FA, Krey T. 2017. **The Ancient Gamete Fusogen HAP2 Is a Eukaryotic Class II Fusion Protein.** *Cell* 168:904-915.e910.

Host: PD Dr. Stefanie Sprunck



Universität Regensburg

Biochemie-Zentrum Regensburg

