

# Identification of novel flagellar transition zone components in *Trypanosoma brucei*

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**Room: Institute of Parasitology,  
Boardroom**

Lecture is organised in frame of MODBIOLIN project (FP7, GA 316304).

**You're welcome!**



Trypanosomes are protozoan parasites that cause significant human and livestock disease in sub-Saharan Africa. They are important model organisms for many aspects of cell biology as well as being fascinating in their own right. The trypanosome flagellum is a multifunctional organelle that is essential for motility, environmental sensing, adherence to host cells and the parasite's ability to cause an infection.

The flagellum transition zone, positioned between the distal end of the basal bodies and the proximal end of the 9+2 axoneme, has increasingly become recognized as of central importance to flagellum function. The transition zone and associated appendages maintain the different compositions of the flagellum and cell body by regulating traffic to and from the flagellum and by providing a diffusion barrier at the base of the flagellum. Moreover, many of the "ciliopathies" such as Meckel and Joubert syndrome are now being recognized as transition zone diseases.

Despite this, in trypanosomes few proteins have been identified that localize to the transition zone and the proteins that make up the characteristic structures of the transition zone are largely uncharacterized in any organism.

To address this, I have used a multi-pronged proteomics strategy to identify novel transition zone proteins. Candidate proteins were genetically tagged with green fluorescent protein and their localization was verified by fluorescence microscopy and / or immuno-gold electron microscopy.

This study has revealed the transition zone's remarkable complexity. To investigate the functions of these proteins, I have generated reporter cell lines to determine their role in maintaining transition zone structure and the different compositions of the flagellum and cell body.