

P034 Analysing the effect of microtubule dynamics on cytokinesis in *Trypanosoma brucei*

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Cytokinesis in the protozoan parasite *Trypanosoma brucei*, which causes sleeping sickness and is transmitted by the tsetse fly, is unusual as it does not appear to require constriction of an actomyosin ring, and furrowing occurs unidirectionally along the length of the parasite. Parasite cell shape is imparted by a microtubule cytoskeleton, and it is possible that this cytoskeleton has an impact on the physical and molecular regulation of cytokinesis. Changes in cytoskeletal dynamics could physically aid membrane invagination, and microtubules may allow tracking of membrane vesicle-carrying kinesins to the furrow. Additionally, microtubule-associated proteins (MAPs) control microtubule stability, can bridge between the cytoskeleton and the plasma membrane and may act as scaffold proteins to integrate signalling pathways. To investigate how cytokinesis in *T. brucei* is influenced by cytoskeleton stability, parasites were treated with stabilising (taxol) and destabilising (vinca alkaloids) microtubule inhibitors. Vinca alkaloids inhibited cytokinesis furrow ingression in the mammalian bloodstream form, while taxol affected accuracy of furrow ingression and abscission in procyclic (insect) form parasites. RNAi of *AIR9*, a MAP required for cytokinesis in plants, is underway, while initial RNAi analyses of several putative katanin subunits suggests these microtubule severing agents are essential for cytokinesis in *T. brucei*.