

Importance of trypanosome motility in the early infection

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Infective forms of *Trypanosoma brucei* parasites are transmitted by the tsetse fly bite and develop in the lymph and blood as extracellular forms, inducing the typical symptoms of the disease. To characterize these early steps of development, mice were infected with fluorescent and bioluminescent parasites and the infection was daily monitored by intravital imaging. After natural transmission, parasites seem to be rapidly drained from the site of injection and firstly observed in the extravascular compartment before being detected in blood. Trypanosome flagellum being proposed as a virulence factor, we have investigated its importance in parasite migration/proliferation and avoidance of host immune system. Conditional knockout parasites for the dynein light chain 1 (LC1) of the dynein motor complex were generated. These mutants express a WT version of the LC1 gene in all insect stages except in metacyclic forms. In these forms as well as in mammalian bloodstream forms, only a non-functional version of LC1 will be expressed, preventing parasites from swimming forward. After natural transmission of these mutants, the early steps of infection will be scrutinized and compared with WT parasites. This study will provide invaluable information on the initiation of the disease that could be helpful for diagnosis improvements.