Title: Dissecting fatty acid metabolism in the livestock parasite *Trypanosoma congolense*

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Animal African Trypanosomiasis (AAT) is a livestock disease prevalent across sub-Saharan Africa, primarily caused by *Trypanosoma congolense*. Whilst the closely related *T. brucei* has been studied for decades, there is a paucity of knowledge regarding the biology of *T. congolense*. We are using a combination of omics techniques to study core metabolism of bloodstream stage *T. congolense*. Like the bloodstream stage of *T. brucei*, glycolysis plays a major part in *T. congolense* energy metabolism. However, the rate of glucose uptake is significantly lower in *T. congolense*, and the glycolytic endpoints differ from those in *T. brucei*. Through the use of metabolic inhibitors we have shown that *T. congolense* is highly resistant to inhibitors of fatty acid synthesis, and instead, appears to rely on uptake to meet its lipid demands. These data have been used to explore fatty acid synthesis and metabolism in African trypanosomes, and to design media formulations that enable *in vitro* culture of the parasite in FBS-supplemented medium, which was previously not possible.