

## MALARIA PARASITE MOTION: THE MEROZOITES 'MOONWALK'

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At the red blood cell (erythrocytic) stage, *Plasmodium Falciparum* merozoites sequentially invade red blood cells, multiply and are being released in the blood stream. The very first steps of cell invasion involve a reorientation of the apical part of the parasite towards the red blood cell membrane, without the aid of cilia, flagella or deformations.

We use videomicroscopy and tracking analysis to understand the specific motion of merozoites and identify the cytoskeleton constituents required for this motion. We performed a detailed analysis of the parasite trajectories and orientation on rigid substrates. We show that the parasite explores all degrees of freedom: in-plane rotation and translation, flipping, and rotation around its revolution axis. A statistical approach allowed us to identify several type of motion.

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