Supporting information

# Phagocytosis dynamics depends on target shape

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**Running title: Target shape dependence of phagocytosis**

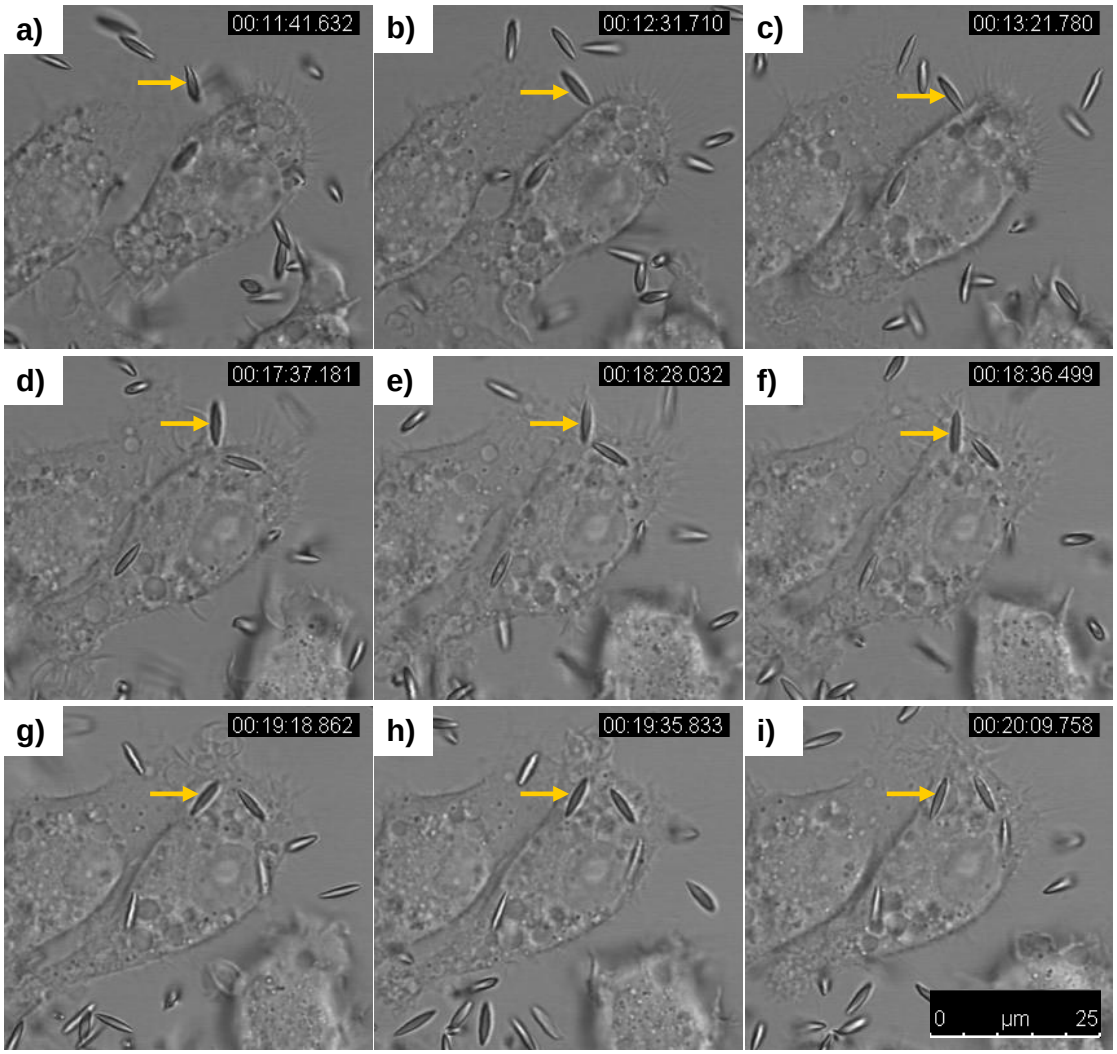


**Figure S1.** Snapshot images of the phagocytosis of a latex ellipsoidal particle. A latex ellipsoidal particle (arrow) floats freely outside the macrophages (a), comes in contact with the plasma membrane of one of the macrophages (b), and stays stuck to the membrane for several minutes (b-e). The particle then starts being pulled towards the inside of the macrophage (f) until complete internalisation (g-i). During this internalisation process, a phagosome is formed around the particle and can be seen in (i). The whole process of phagocytosis took about 8 minutes from first contact (b) to complete internalisation (i). Time stamps are shown in the top right corner of each image.

Movie 1. Z-stack and time-lapse (30 sec) movie showing phagocytosis of a 3 μm silica bead. The movie has been speeded up by 3X. The phagocytosed bead is shown by a green arrow. After ~ 20 minutes from the start of image acquisition, the cell membrane makes contact with the bead. Membrane ruffles start forming indicating phagocytosis is in progress. After ~ 25 minutes, the complete phagosome is formed around the bead. The phagosome then continues to shrink until the end of the clip. In-focus frames from this movie has been shown in figure 2 to explain the experimental protocol for determining start and end times of uptake.

Movie 2. Time-lapse movie showing the phagocytosis of an ellipsoidal bead (indicated by green arrow). Only the in-focus frames have been used to make the movie, which was then speeded up 3 times. The frames from this movie are shown in figure S1.

Movie 3. Movie clip showing reversible contact between a latex sphere (green arrow) and a RAW cell. The latex bead remains attached to the cell membrane for ~ 40 seconds before it is released again by the cell. Since this contact does not result in uptake of the target, it is called reversible.

Movie 4. A conidia is being pulled by an optical trap for delivery to a RAW cell. The mathematical position of the trap is given by the tiny red dot, while the green arrow indicates its approximate position.

Movie 5. The movie shows a conidia being pulled by the filopodia of a RAW cell. The movie has been speeded up by 4X. The optical trap is shown by the red dot (highlighted by the arrow). It was not possible to detach the conidia from the cell by moving the position of the trap, thereby indicating the contact of the conidia with the cell membrane is irreversible.