Supplemental movies

Scale bars of all movies correspond to 10 μm.

Movie 1. Cell during recovery of actin polymerization showing an actin wave (red) that propagates in varying directions with negligible net movement of the cell. The wave separates an inner territory highly decorated with PHcrac (green) from an external area with almost no decoration. The same cell is shown in Figure 1A**.** Frame-to-frame interval 1 s.

Movie 2. Partial uptake of a long particle followed by bleb formation during rapid release. The actin ring around the rim of the phagocytic cup is colored red, the PHcrac-decorated area green. The same process is shown in Figure 1B and C. Frame-to-frame interval 4 s.

Movie 3. Evolution of a toroid-like planar pattern of actin (red) and PHcrac (green). The same pattern dynamics on the substrate-attached cell surface is shown in Figure 3A. Before the movie starts, the still image indicates in the left panel the position of the line scan shown in the right panel. I_f, fluorescence intensities on a linear scale in arbitrary units. Frame-to-frame interval 1 s.

Movie 4. Formation of an actin tube (green), with enrichment of actin at its ends, around the shaft of a long particle (greyscale DIC image). The same actin pattern dynamics on a phagocytic cup is shown in Figure 3B. Frame-to-frame interval 4 s.

Movie 5. High PHcrac labeling of a membrane tube between two actin rings along an extended phagocytic cup. The same pattern development is shown in Figure 3C.
Frame-to-frame interval 1 s.

Movie 6. Actin waves propagating along a phagocytic cup toward its rim (confocal images of green fluorescence are superimposed on the greyscale DIC image). Finally, the particle is expelled and excess membrane incorporated into actin rich surface ruffles. The same sequence is shown in Figure 4B. Frame-to-frame interval 4 s.

Movie 7. Uptake of a long particle and actin wave formation in a cell lacking myosin-II. At the beginning of uptake, the particle is contacted by surface protrusions that emanate from a circular wave spontaneously formed on the plasma membrane. During uptake, the actin-rich surface extensions are suppressed. Upon closure of the cup, the inner actin ring propagates toward the site of uptake, followed by another actin ring. At the same time force applied to the particle slightly bends the far membrane outwards. The cell expresses LimEΔ-GFP (green). Note that only actin structures located in the confocal plane appear labeled. Frame-to-frame interval 4 s.

Movie 8. Double view of a cell forming actin waves and taking up a particle. The left panel is focused on the substrate-attached cell surface, the right panel is an optical section through the cell body. The same events are shown in Figure 5B. Frame-to-frame interval 400 ms.

Movie 9. Wave and phagocytic cup formation recorded at two planes of focus as for movie 8. Frame-to-frame interval 400 ms.

Movie 10. Conversion of an actin wave (green) into a phagocytic cup. The particle taken up is labeled red, and is seen out of focus in the bright-field image colored blue. The same sequence is shown in Figure 5C. Frame-to-frame interval 3 s.

Movie 11. A cell that has phagocytosed four particles and continues wave formation while it takes up a fifth particle. The cell has been recorded as in movie 10, but the focus has been repeatedly changed to show waves on the substrate-attached cell surface and phagosomes within the cell. Frame-to-frame interval 3 s.