

Extended Data Table 1 | Measurements of organelle characteristics in COS-7 cells

<i>Organelle measurement</i>	<i>Value</i>
<u>Lipid droplets</u>	
Number per cell*	157 +/- 21
Mean volume*	0.41 +/- 0.05 μm^3
Total volume per cell*	65 +/- 10 μm^3
Maximum speed [^]	155.3 +/- 0.1 nm/s
<u>Peroxisomes</u>	
Number per cell*	186 +/- 19
Mean volume*	0.27 +/- 0.02 μm^3
Total volume per cell*	48 +/- 6 μm^3
Maximum speed [^]	148.9 +/- 0.1 nm/s
<u>Lysosomes</u>	
Number per cell*	89 +/- 10
Mean volume*	0.24 +/- 0.02 μm^3
Total volume per cell	20 +/- 2 μm^3
Maximum speed [^]	377.7 +/- 0.1 nm/s
<u>Golgi</u>	
Total volume per cell*	42 +/- 3 μm^3
<u>ER</u>	
Total volume per cell*	1538 +/- 178 μm^3
<u>Mitochondria</u>	
Total volume per cell*	179 +/- 20 μm^3
<u>ERMCSs</u>	
Number per cell [^]	550 +/- 90
Total area [^]	60 +/- 10 μm^2
<u>Whole Cell</u>	
Total volume per cell*	6074 +/- 464 μm^3

Values reported as mean \pm s.e.m. marked with * were measured in 3D volume rendered images from the LLS spectral instrument, $n = 10$ cells. Values reported as mean \pm s.e.m. marked with [^] were measured in single z-plane confocal images of live cells, $n = 10$ cells.