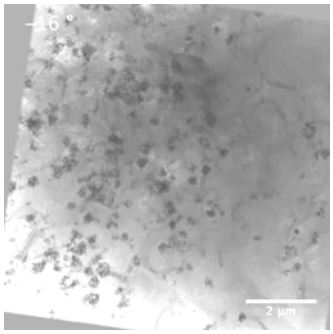
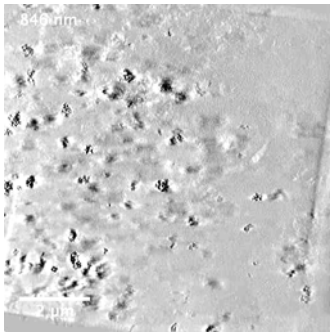
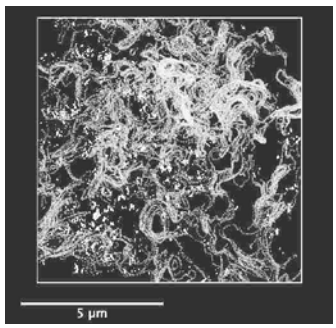


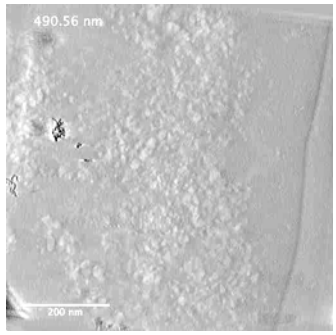

**Movie S1.** Tilt-series of a region of a whole mount macrophage cell. Chromatic and spherical aberration-corrected bright field transmission electron microscopy (TEM) tilt series were recorded at an acceleration voltage of 300 kV. The magnification was 3,300×. The objective aperture semiangle was 10 mrad. The acquisition time per image was one second. The pixel size was 4.53 nm. The tilt-series ranged from −40° to 34° in 2° steps.



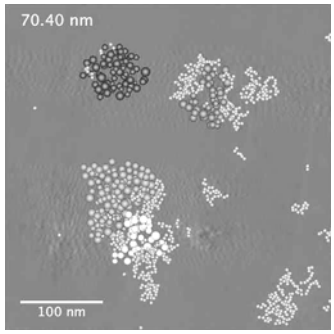
**Movie S2.** Reconstructed tomogram of the same cellular region as shown in Movie S1 with dimensions of 9277 × 9277 × 4194 $nm^3$ (x, y, z). The dataset was reduced in size for presentation in the movie; one horizontal (x, y) slice out of two is shown in the movie. Slices shown in the movie are separated by 9 nm along the vertical (z) axis. The movie shows slices from the bottom of the cell in contact with the silicon nitride window to its very top.




**Movie S3.** Three-dimensional (3D) model of clusters of low-density lipoprotein (LDL) coated gold nanoparticles (green), and membrane ruffles (blue) of the same tomogram shown in Movie S2. The movie shows a rotation over an angle of 360° with steps of 6°. The 3D model is shown at a lower magnification than the original tomogram in Movie S2 to capture the whole 3D model during its 360° rotation.




**Movie S4.** Reconstructed tomogram of a perinuclear region with dimensions of 2990 × 2990 × 2091 $nm^3$ (x, y, z). Chromatic and spherical aberration-corrected bright field TEM tilt series were recorded at a magnification of 9,800× (pixel size 1.46 nm) and further settings as for the dataset of Movie S1. A reduced dataset is shown in the movie. One slice out of four was selected for presentation. Slices shown in the movie are separated by 5.84 nm along the z-axis. The movie shows a series of slices from the bottom of the cell in contact with the silicon nitride window to its top.




**Movie S5.** Tomogram and 3D model of a cellular region with dimensions of 396 × 396 × 688 $nm^3$ (x, y, z). Chromatic and spherical aberration-corrected bright field TEM tilt series were recorded at a magnification of 34,000× (pixel size 0.44 nm) and further settings as for the dataset of Movie S1. One slice out of four was presented in the movie. Slices shown in the movie are separated by 1.76 nm along the z-axis. The movie shows first a series of slices from the bottom of the cell in contact with the silicon nitride window to its top, then the same dataset in the reverse order with the individual nanoparticles modeled in 3D incorporated to the tomogram, and the last part of the movie is a 3D rotation of the modeled nanoparticles without the tomogram. The 3D model shows the individual nanoparticles: 7 nm-diameter nanoparticles (green), and 16 nm-diameter nanoparticles of separate clusters in magenta, yellow, red, and blue, respectively.