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Supporting Information

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Characterizing the Lateral Friction of Nanoparticles on On-Chip Integrated Black Lipid Membranes

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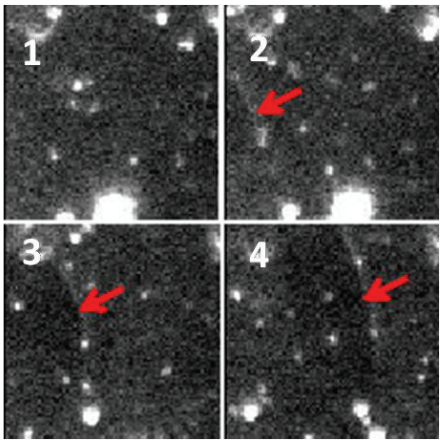

Figure S1. Lipid bilayer "zipping" monitored in the darkfield microscope. The bilayer starts to form from the left side and gradually extends to the right side. The top leaflet of the membrane was labeled with NPs to facilitate an easy focusing on the plane of the membrane in the darkfield microscope.

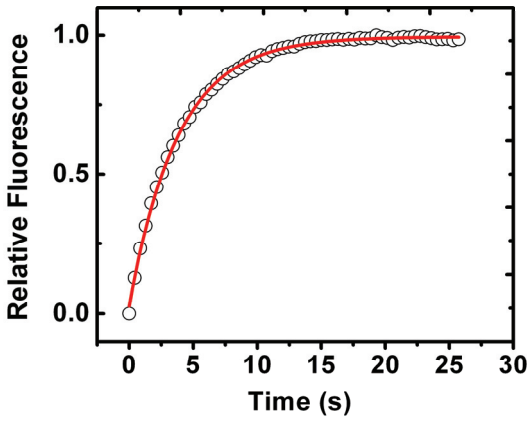

Figure S2. Fluorescence recovery curve for a BLM as determined by FRAP. Fluorescein labeled PE (10 mol %) was used as fluorescent dye, the bleached spot had a radius of around 14 μm.

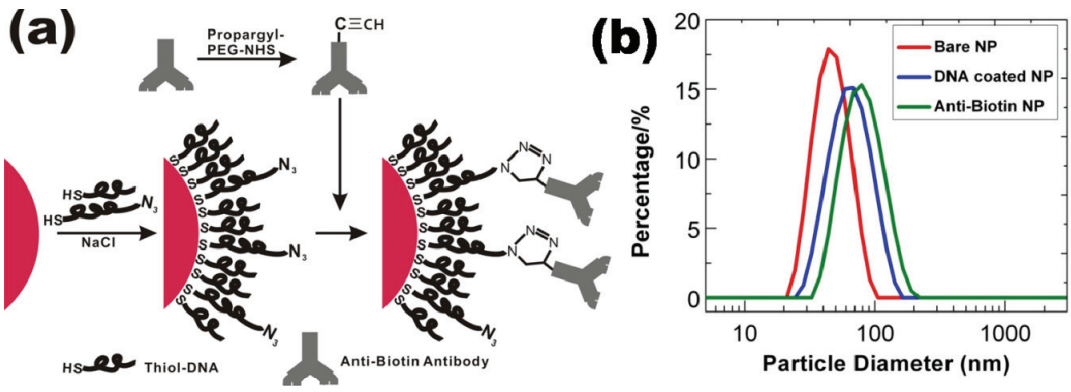

Figure S3. Ab-DNA-NPs preparation and characterization. (a) Schematic overview of Ab-DNA-NPs preparation through click-chemistry. (b) The increase in hydrodynamic radius (determined by DLS) as function of polymer functionalization and antibody crosslinking confirm a successful functionalization of the NPs.

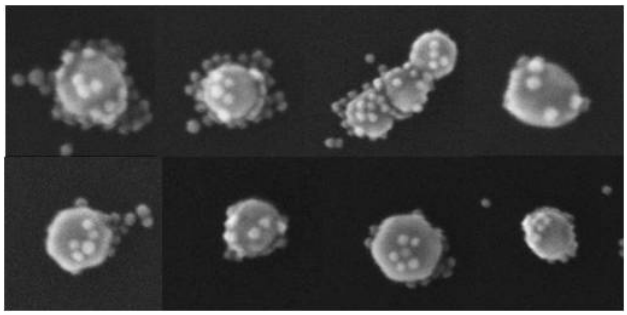

Figure S4. SEM images of 40 nm Ab-DNA- NPs after incubation with 10 nm diameter biotin NPs. The strong binding of the 10nm biotin NPs confirms a successful functionalization of the 40 nm particles with multiple antibodies. Control experiments with 40 nm nanoparticles functionalized with radom IgG antibodies did not yield any binding.

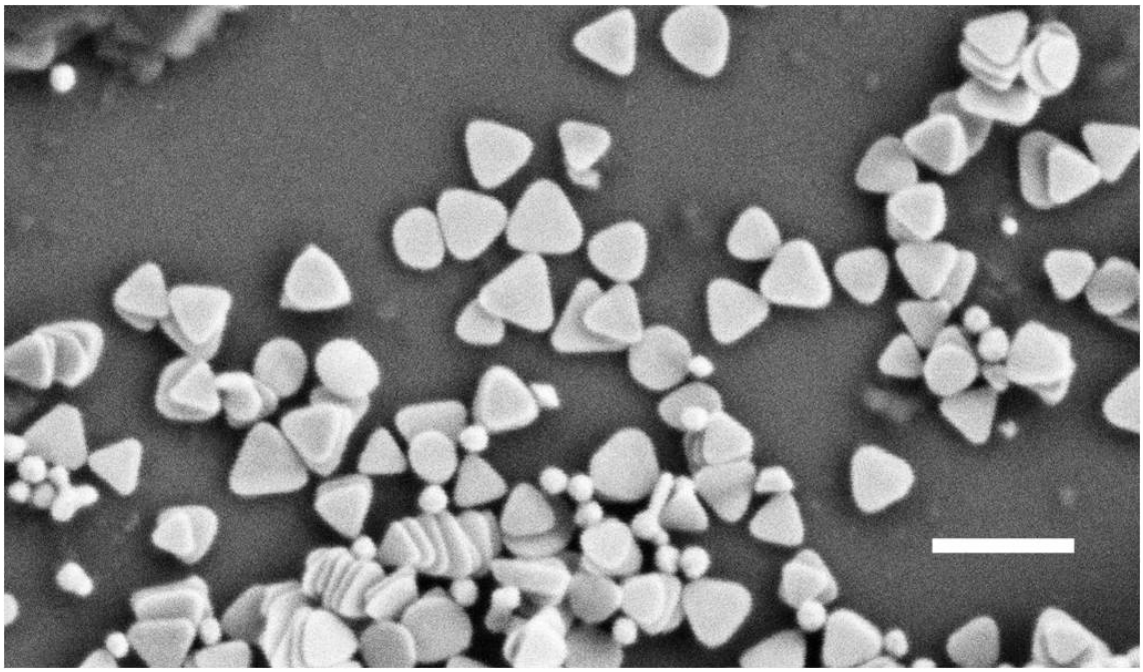

Figure S5. SEM image of nanoprisms. The scale bar represents 200nm.