

## Supporting Information

### Silica-Coated Au@ZnO Janus Particles and Their Stability in Epithelial Cells

Moritz Susewind,<sup>a</sup> Anna-Maria Schilman,<sup>a</sup> Julia Heim,<sup>b</sup> Andreas Henkel,<sup>c</sup> Thorben Link,<sup>d</sup> Karl Fischer,<sup>c</sup> Dennis Strand,<sup>b</sup> Ute Kolb,<sup>c</sup> Muhammad Nawaz Tahir,<sup>a</sup> and Jürgen Brieger,<sup>b</sup> Wolfgang Tremel<sup>a\*</sup>

<sup>a</sup>Institut für Anorganische Chemie und Analytische Chemie, Johannes Gutenberg-Universität, Duesbergweg 10-14, 55128 Mainz, Germany

Germany

<sup>b</sup>Medizinische Klinik, Universitätsmedizin der Johannes Gutenberg-Universität, Langenbeckstrasse 1, 55131 Mainz, Germany

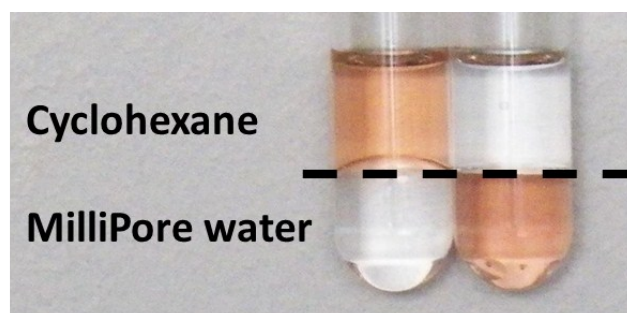
Germany

<sup>c</sup>Institut für Physikalische Chemie, Johannes Gutenberg-Universität, Jakob-Welder-Weg 11, 55128 Mainz, Germany

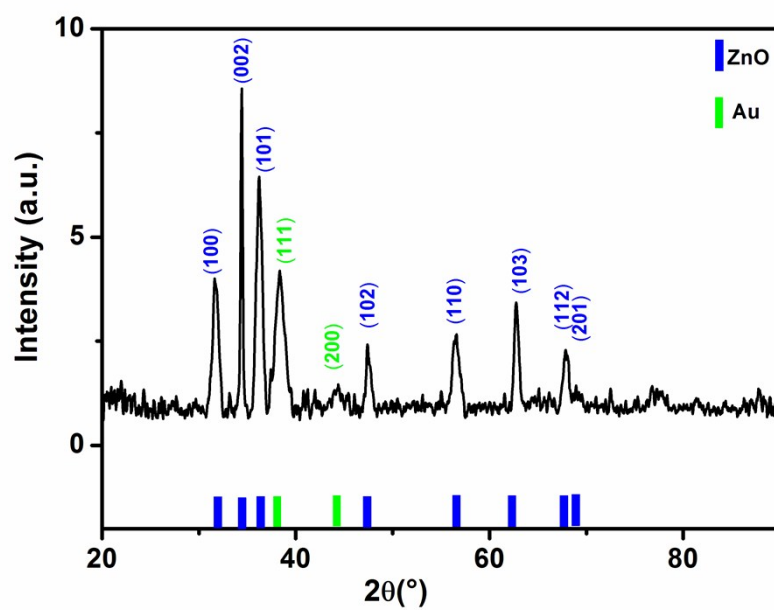
<sup>d</sup>Institut für Physiologische Chemie, Abt. Angewandte Molekularbiologie, Johannes Gutenberg-Universität, Duesbergweg 6, 55099 Mainz, Germany

Received (in XXX, XXX) Xth XXXXXXXXX 20XX, Accepted Xth XXXXXXXXX 20XX

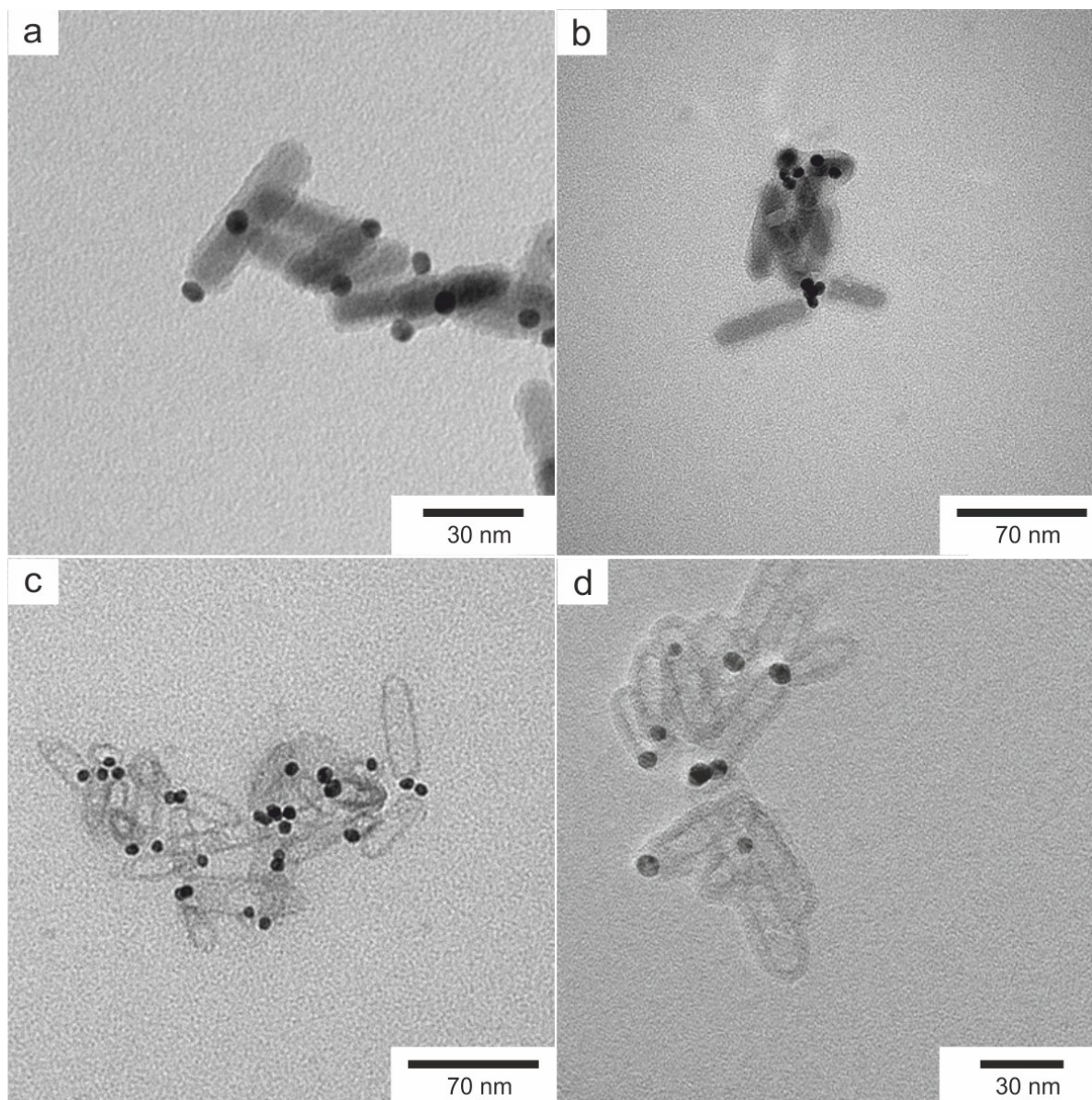
DOI: 10.1039/b000000x



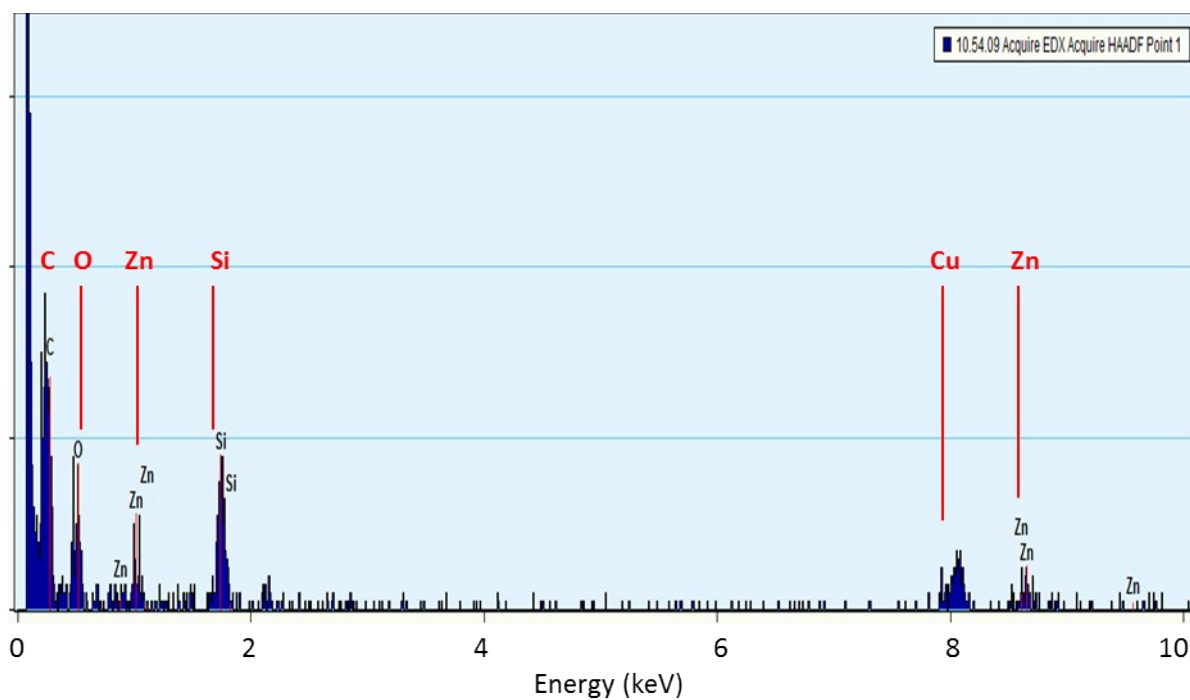
**Figure S1:** Digital photograph of Au@ZnO solutions before (left) and after silica shell (right) in hexane (top layer) and in water (bottom layer).



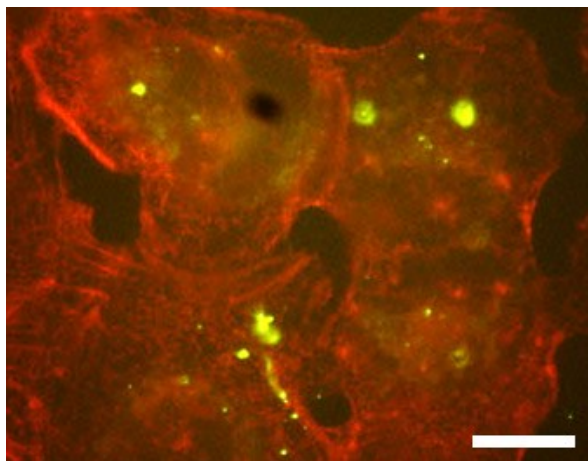
**Figure S2:** X-ray diffraction patterns of Au@ZnO Janus particles



**Figure S3:** (a) TEM image of Au@ZnO@SiO<sub>2</sub> Janus particles showing the asymmetrically SiO<sub>2</sub> coating, leaving the Au domain untouched, (b) Janus particles sticking together via the Au-domain, (c) visible SiO<sub>2</sub> shell after ZnO dissolution for a better contrast, (d) HR-TEM image of the obtained Au@SiO<sub>2</sub> nanoparticles



**Figure S4:** The corresponding EDX spectrum measured at the ZnO@SiO<sub>2</sub> interface confirms the presence of the SiO<sub>2</sub> shell on the ZnO domain



**Figure S5:** Confocal laser fluorescence scanning microscopy image of the uptake of FITC-labeled Au@ZnO@SiO<sub>2</sub> (green) nanoparticles in adenocarcinoma cells (red, Alexa Fluor 555 Phalloidin). Scale: 20  $\mu$ m.