Supporting Information

"Ultra-mixing": a Simple and Effective Method to Obtain Controlled and Stable Dispersions of Graphene Oxide in Cell Culture Media

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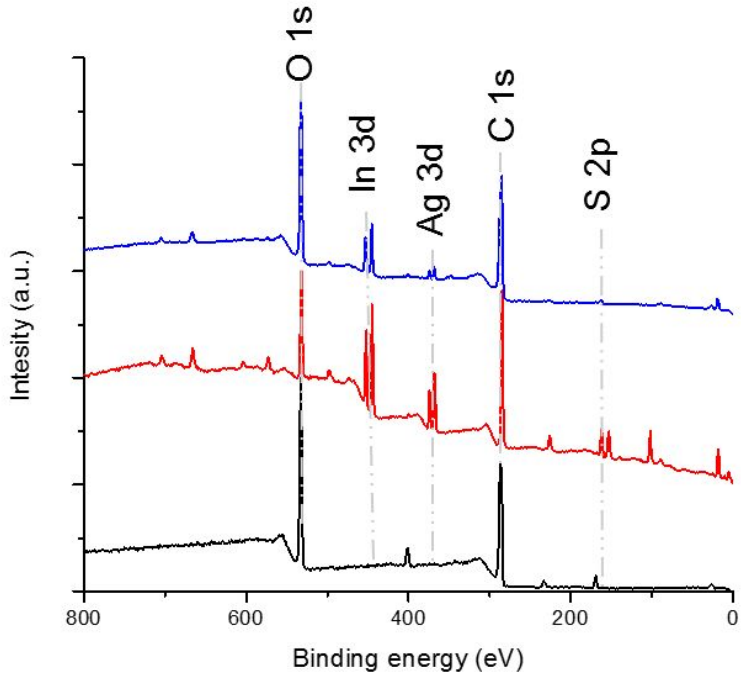

Figure S1. XPS characterization of GO (black line), QD [At% C 40%, O 25%, N 3%, In 8% Ag 8%, Zn 2% S 15%] (red line) and GO-QD (blue line).

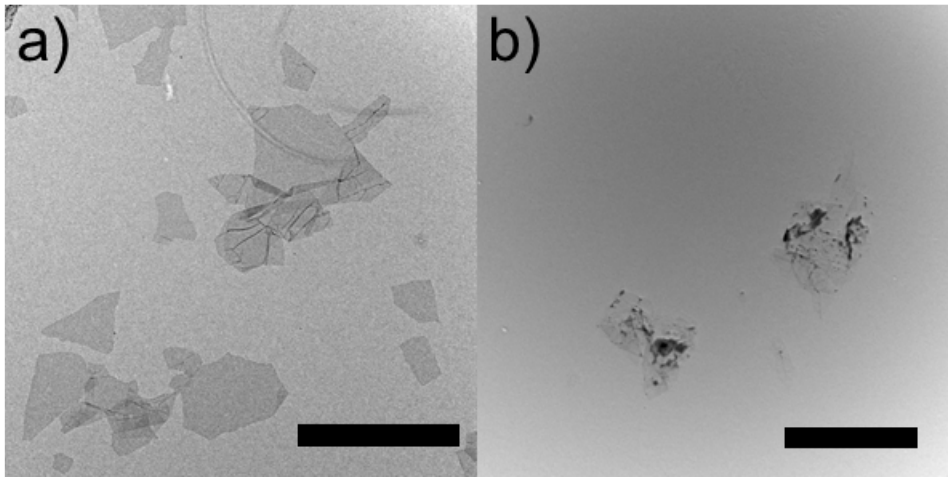

Figure S2. Overview TEM image of and a) GO and b) GO-QD Scale bar: 2 µm.

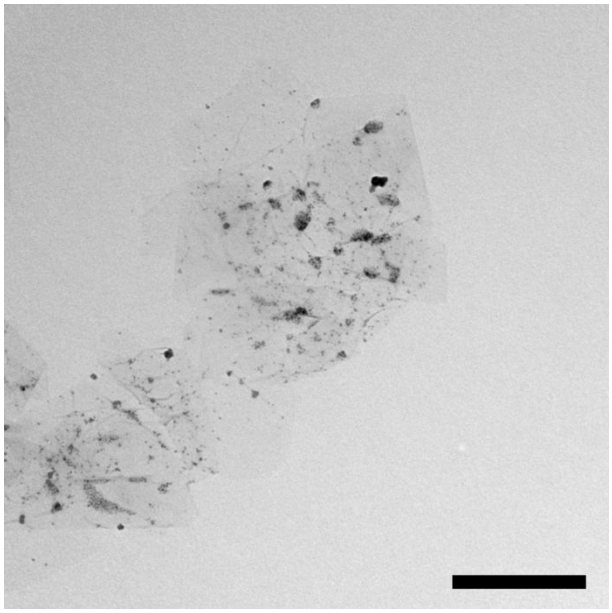

Figure S3. TEM image of GO-QD after 1-month aging. Scale bar: 500 nm.

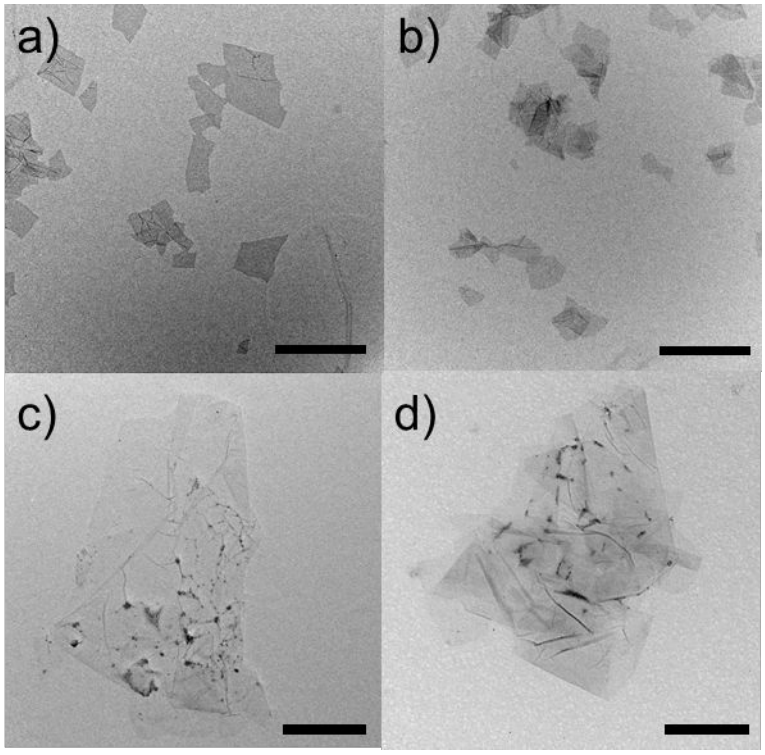

Figure S4. TEM images of: GO a) before and b) after Ultra-Turrax treatment. High magnification images of GO-QDs c) before and d) after Ultra-Turrax treatment. Scale bars: a and b 2μm, c and d 500 nm.

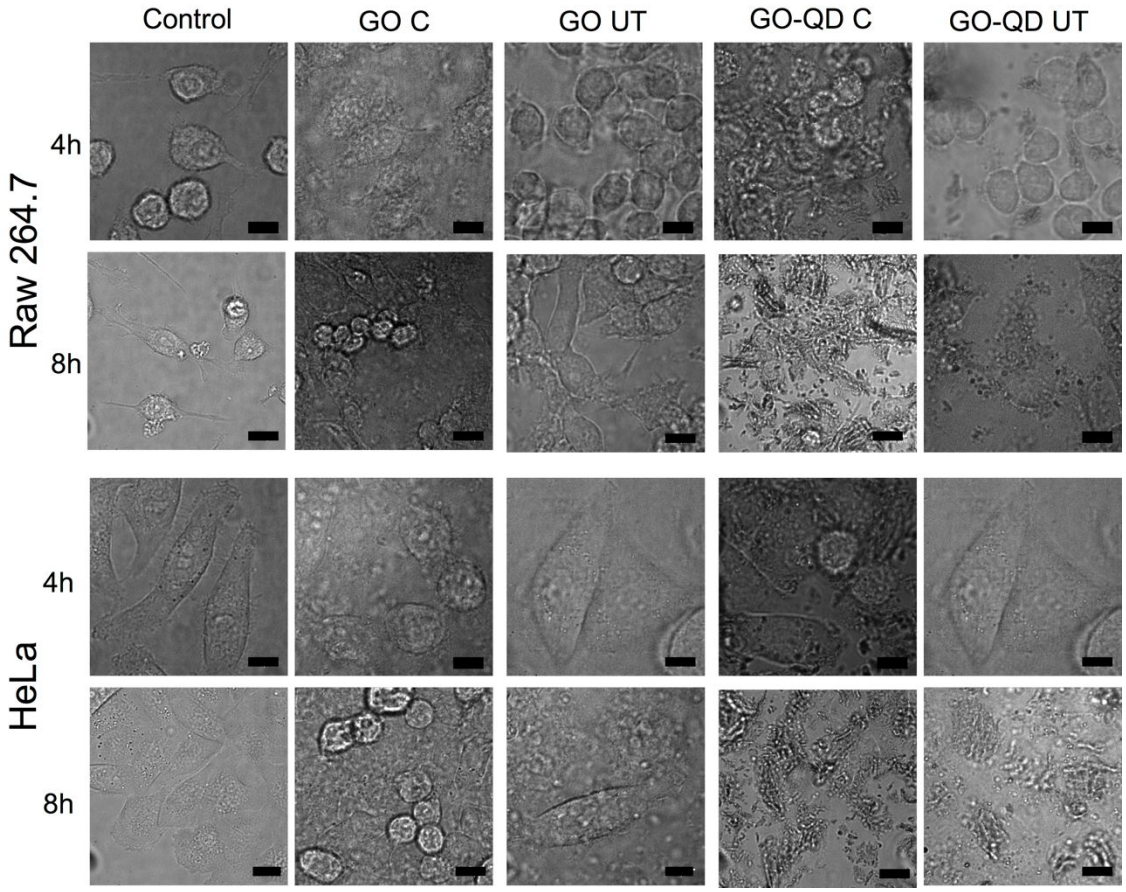

Figure S5. Bright field images of Raw 264.7 (upper panel) and HeLa (lower panel) cells after 4 and 8 h of incubation at 20 μg/ml with the different materials. Scale bar: 10 μm.

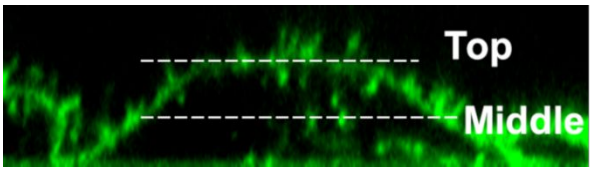

Figure S6. Scheme of the planes (top and middle) to assess the internalization efficiency. In green, HeLa cell membrane viewed on the xz plane.

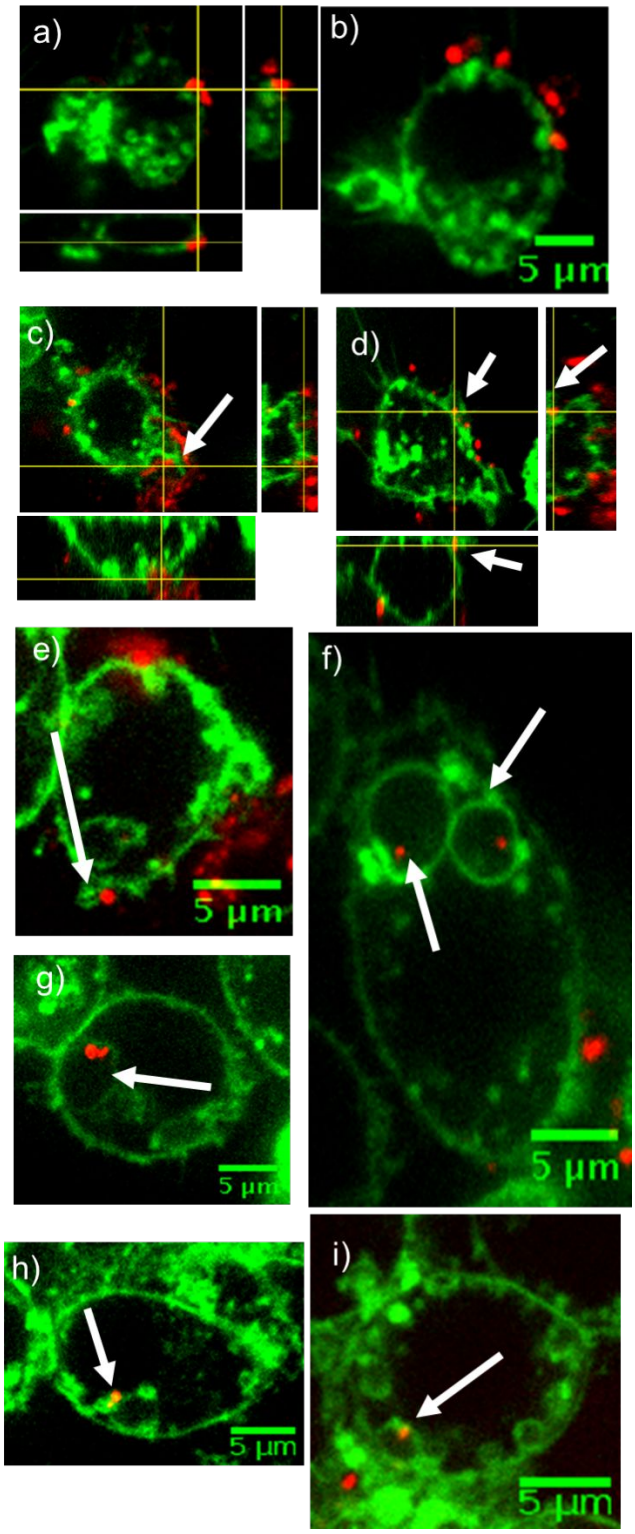

Figure S7. Confocal images of Raw 264.7 cell internalization pattern attending the size and aggregation degree of the nanomaterial. GO-QD C after (a) 8 h and (b) 24 h is trapped in the cell membrane. GO-QD UT after (c-e) 8 h and (f-i) 24 h. In panels c-e, the white arrows indicate the formation of membrane protrusions allowing the internalization likely *via* macropinocytosis of GO-QD UT aggregates, while in panels f-i, GO-QD UT are visible inside endocytic vesicles.

Video S1. Overlay of the z stacking of Raw 264.7 after 24 h incubation with 20 μg/ml of GO-QD C. In green, Cell-Mask; in red, GO-QDs.

Video S2. Overlay of the z stacking of Raw 264.7 after 24 h incubation with 20 μg/ml of GO-QD UT. In green, Cell-Mask; in red, GO-QDs.

Video S3. Overlay of the z stacking of HeLa after 24 h incubation with 20 μg/ml of GO-QD C. In green, Cell-Mask; in red, GO-QDs.

Video S4. Overlay of the z stacking of HeLa after 24 h incubation with 20 μg/ml of GO-QD UT. In green, Cell-Mask; in red, GO-QDs.