

Supporting information

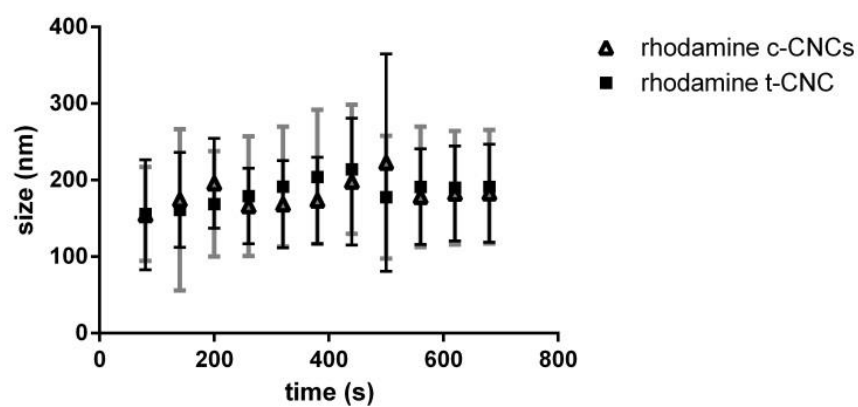


Figure S1 Colloidal stability of rhodamine-CNC dispersions prepared by sonication in aqueous suspensions monitored by mean size analysis *via* single particle tracking over time. Triangles represent rhodamine-c-CNCs, squares rhodamine-t-CNCs.

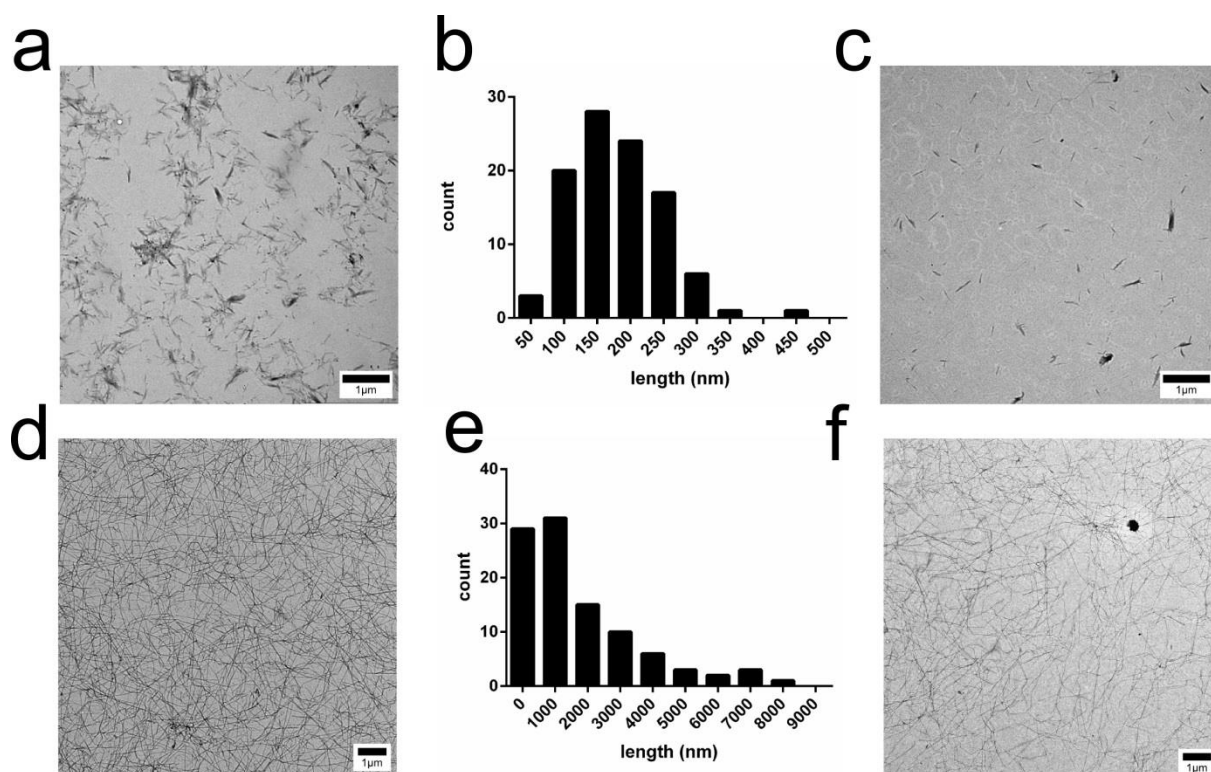


Figure S2 TEM images of rhodamine-labeled CNCs nebulized with the ALICE system. Shown are TEM grids onto which $0.56 \pm 0.25 \mu\text{g}/\text{cm}^2$ (a) and $0.14 \pm 0.06 \mu\text{g}/\text{cm}^2$ (c) of rhodamine-c-CNCs or $0.67 \pm 0.09 \mu\text{g}/\text{cm}^2$ (d) and $0.13 \pm 0.04 \mu\text{g}/\text{cm}^2$ (f) of rhodamine-t-CNCs has been deposited. Histograms b (c-CNCs) and e (t-CNCs) show the length distribution after nebulization from 100 individual measurements. Scale bars represent $1 \mu\text{m}$.

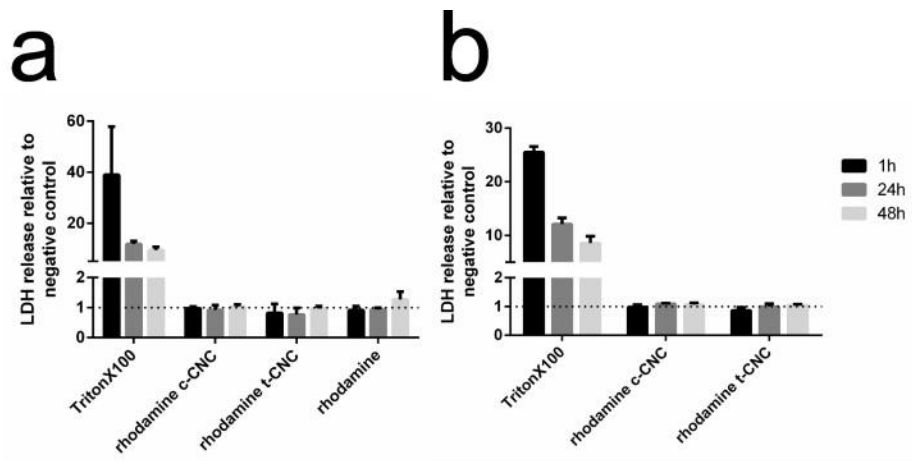


Figure S3 LDH release measured from triple-cell co-cultures exposed to (a) $\sim 0.62 \mu\text{g}/\text{cm}^2$ or (b) $\sim 0.14 \mu\text{g}/\text{cm}^2$ rhodamine-CNCs. Results are presented relative to the negative control. TritonX₁₀₀ served as positive control.

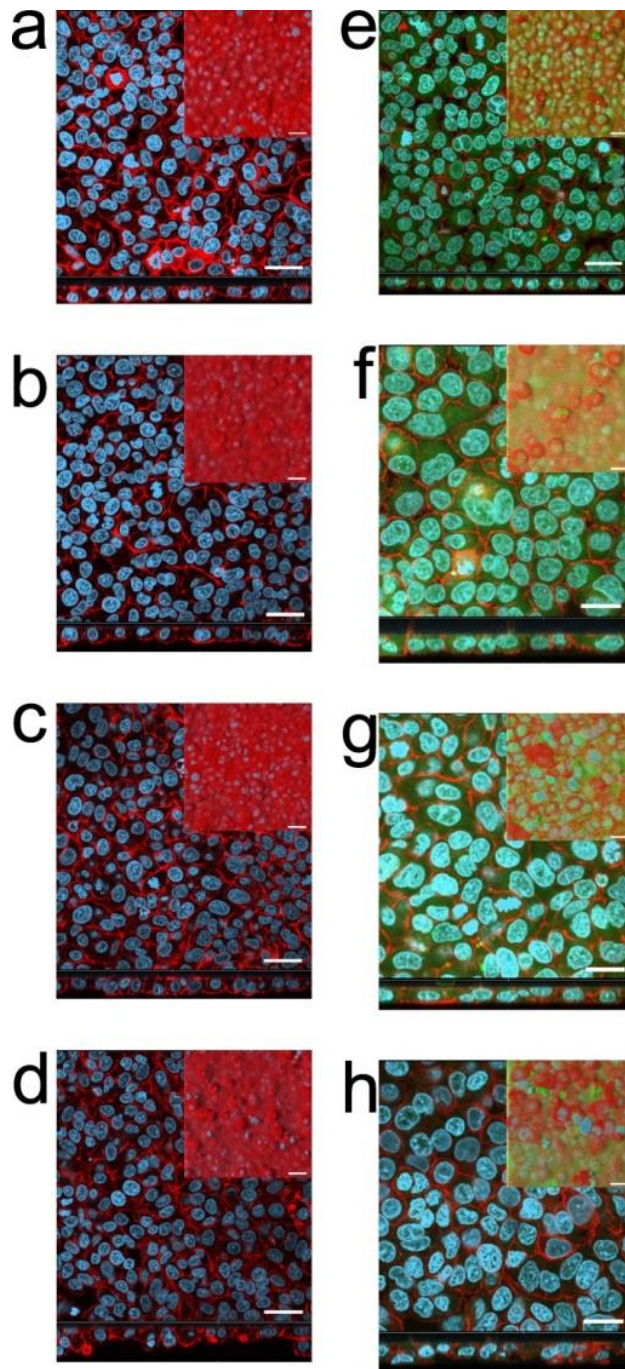


Figure S4 Confocal laser scanning microscopy images of triple-cell co-culture model exposed to the negative control (NaCl) *via* the ALICE system. Co-cultures were either exposed to 500 μ M NaCl only (**a-d**) or 100 μ M rhodamine solution (**e-h**). Cells were immediately fixed (**a, e**) or after 1 (**b, f**), 24 (**c, g**) or 48 h (**d, h**) post-exposure and stained for cytoskeleton (red) and nuclei (cyan). Images are presented as surface rendering (insets) and xy/yz-projection of the z-stacks. Scale bar = 30 μ m.