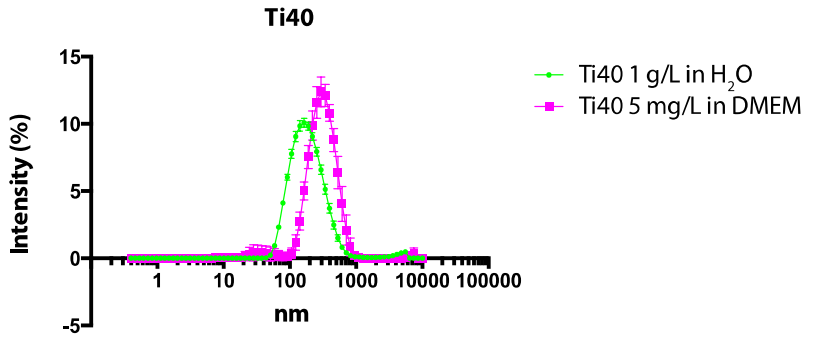
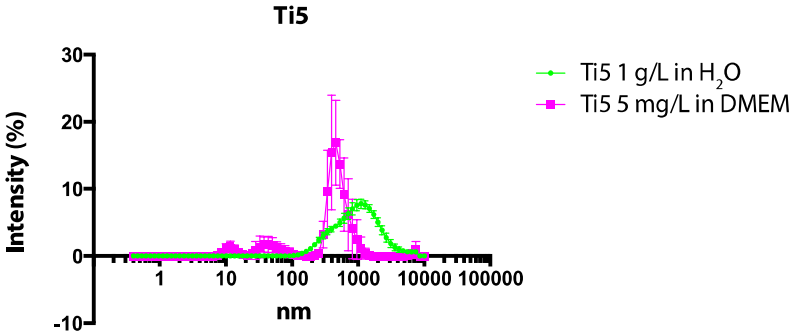
Figure S1

a



b

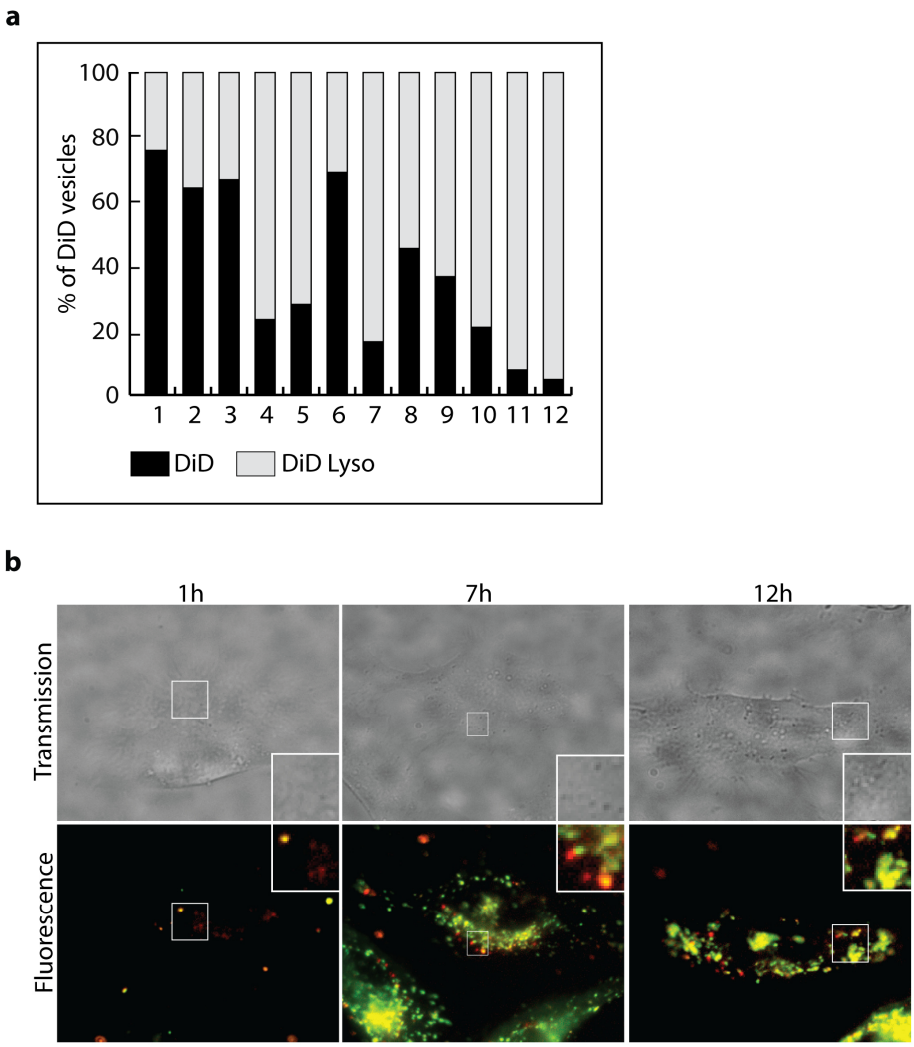


c

	Z-average 1 g/L in water	Z-average 5 mg/L in DMEM	Zeta-potential
Ti40	162.5 ± 2.1 nm	163.0 ± 3.2 nm	-41.1 ± 0.3 mV
Ti5	563.5 ± 48.8 nm	360.0 ± 100.3 nm	15.2 ± 0.6 mV

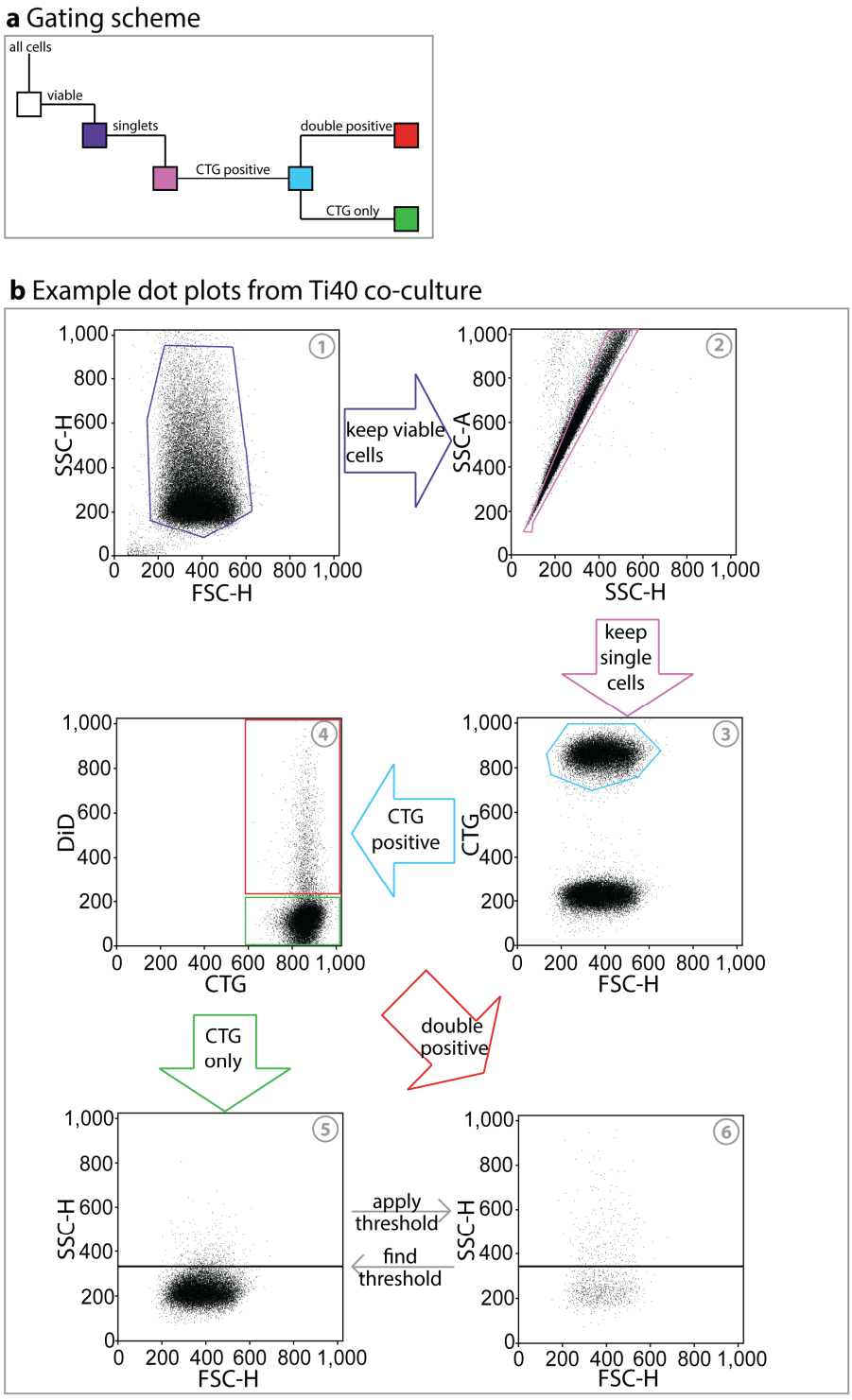
Measurements of hydrodynamic size and zeta-potential of Ti40 and Ti5. Batch dispersions of Ti40 and Ti5 were prepared in water at 1 g/L and dilutions in complete cell culture medium at 5 g/L were subsequently prepared. The hydrodynamic radii of Ti40 (a) and Ti5 (b) differed from their nominal sizes. An overview of z-averages and measured zeta-potential in water can be found in (c).

Figure S2



DiD increasingly colocalises with LysoTracker Green over time. NRK cells were stained with 1 µl/ml DiD and LysoTracker Green and imaged every hour for 12 hours. Images were thresholded and DiD-positive vesicles were detected with the automated particle detection plugin included in the Fiji software package. Colocalisation of DiD and LysoTracker Green was assessed by measuring the fluorescence intensities of LysoTracker Green in DiD-positive vesicles. Vesicles containing both DiD and LysoTracker Green (DiD Lyso) or only DiD (DiD) were counted and are plotted as a percentage of the total number of DiD vesicles over time.

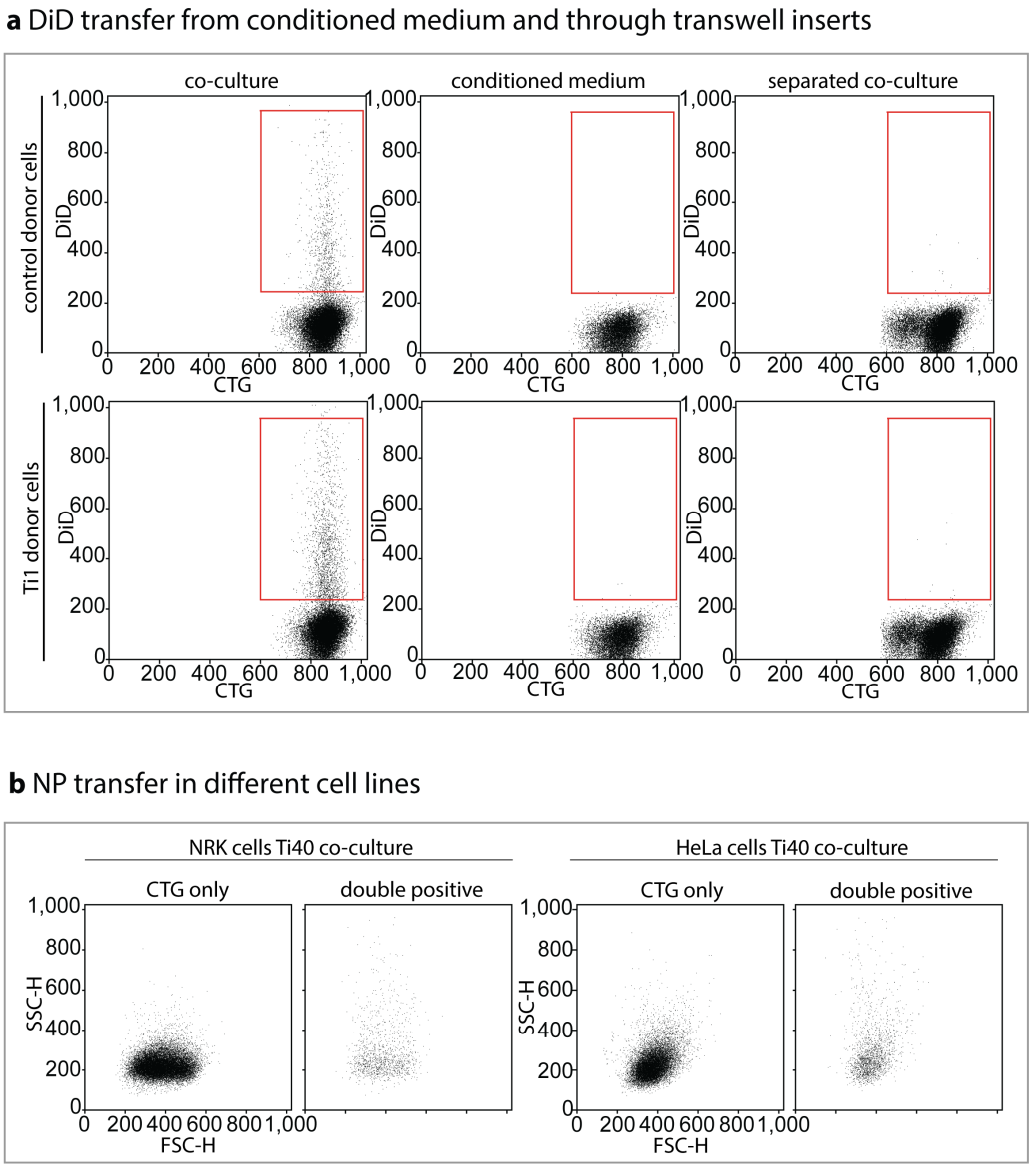
Figure S3



Gating scheme to assess individual granularities. (**a**) Flow chart illustrating the gating of various cell populations. (**b**) Hierarchical gating of live cells as determined by SSC-H versus FSC-H in plot (1), doublet exclusion by plotting of SSC-A versus SSC-H in (2), which led to gating of all CTG positive cells in (3) and then

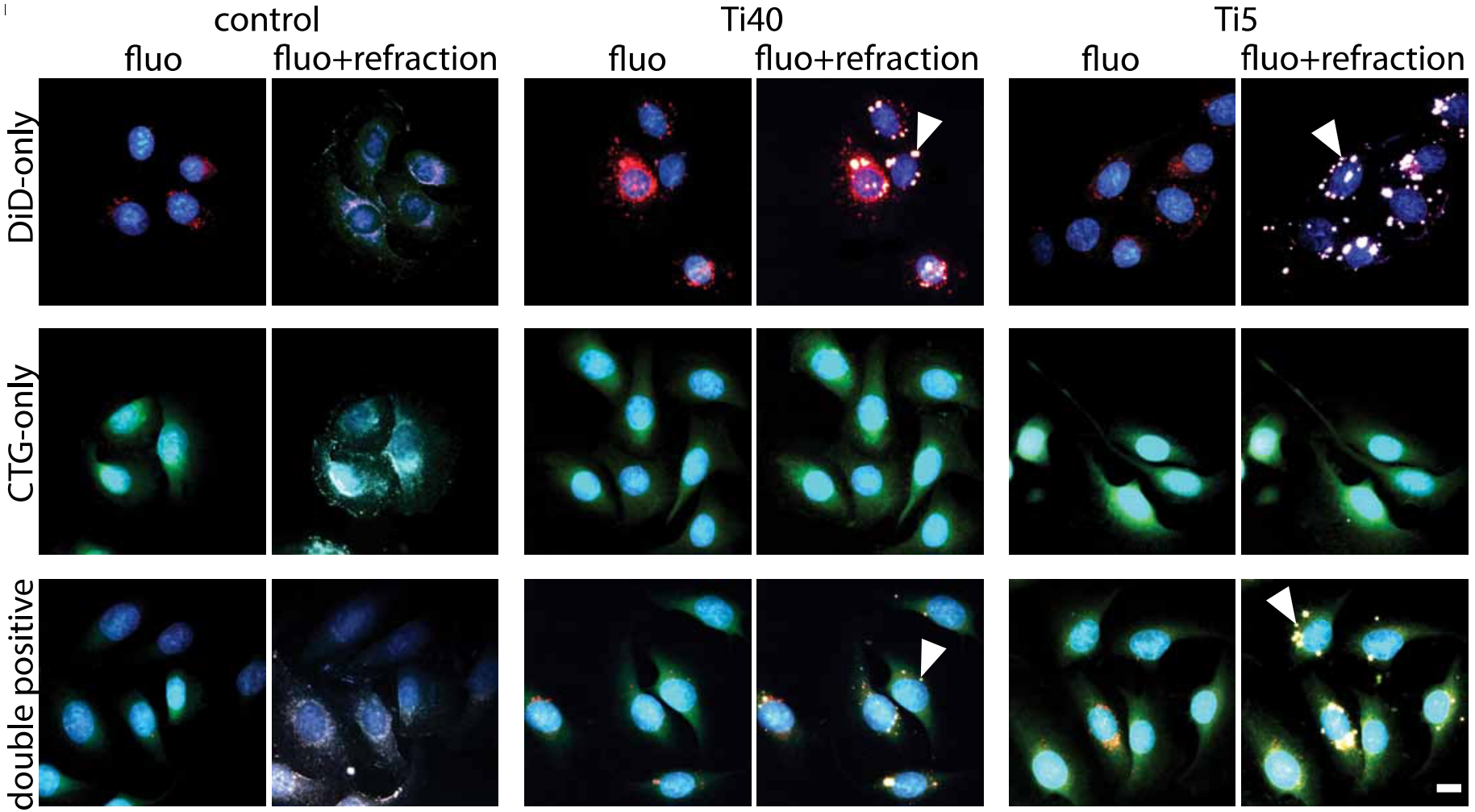
determination of the double-positive portion of CTG cells in (4) by plotting of DiD versus CTG fluorescence. A SSC-H versus FSC-H threshold was found for untreated CTG monocultures such that approximately 99% of cells fell below the threshold. Applying this threshold in plots (5) and (6) led to determination of the percentage of cells displaying increased granularity (i.e. those with SSC values above the threshold).

Figure S4



DiD transfer in NRK cells is contact-dependent and NPs are also transferred between HeLa cells. (**a**) Example DiD versus CTG dot plots of all CTG cells incubated with either control or Ti40 donor cells directly (left panels), only their conditioned medium (middle panels) or with a Transwell insert acting as physical barrier between acceptor and donor cells (right panels). (**b**) SSC versus FSC dot plots of CTG-only and double-positive populations from the cocultures with NRK (left panels) or HeLa (right panels) Ti40 donor cells.

Figure S5


control
Ti40
Ti5
fluo
fluo+refraction
fluo
fluo+refraction
fluo
fluo+refraction
DiD-only
CTG-only
double positive

Complete set of darkfield images corresponding to Figure 4a (main text). Control, Ti40 and Ti5 co-cultures were FACS-sorted into CTG-only, DiD-only and double positive subpopulations, plated on coverslips and fixed as soon as cells were spread. Darkfield images were acquired in parallel in fluorescence only mode ("fluo") as well as with the addition of some white light to visualise NPs ("fluo+refraction"). White arrowheads point to NP aggregates. Scale bar: 10 μm.