

## Supplementary Materials for

### Nanodroplet-based reagent delivery into water-in-fluorinated-oil droplets

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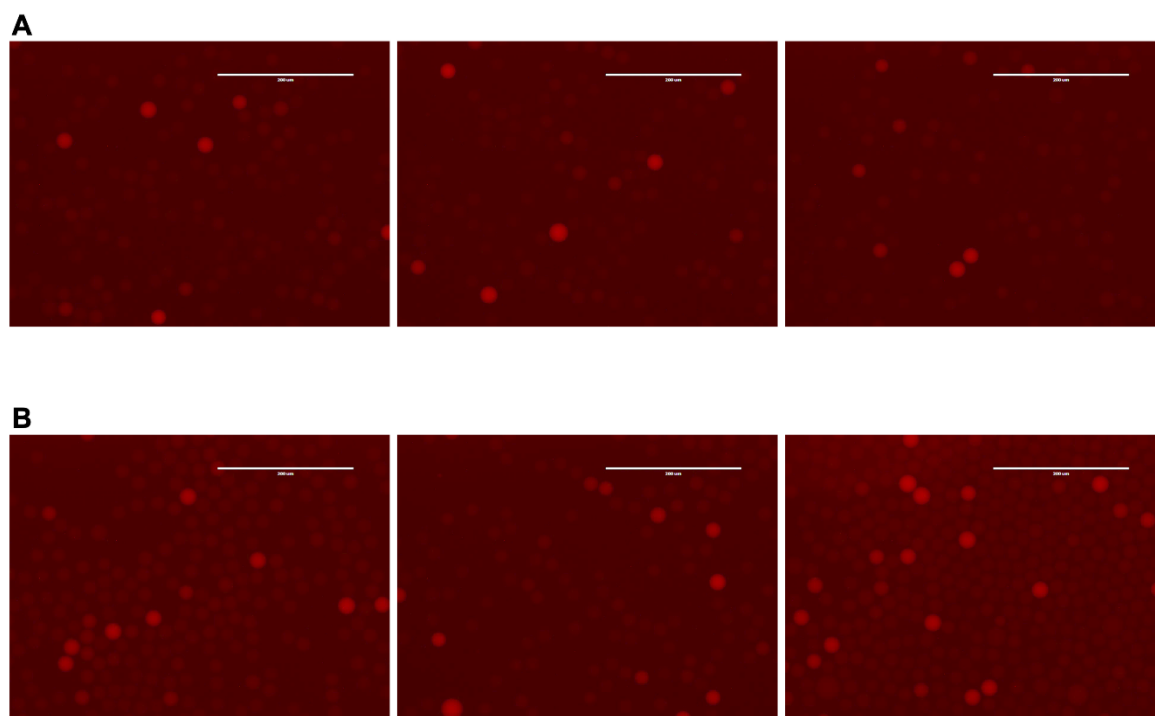
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#### \* Correspondence:

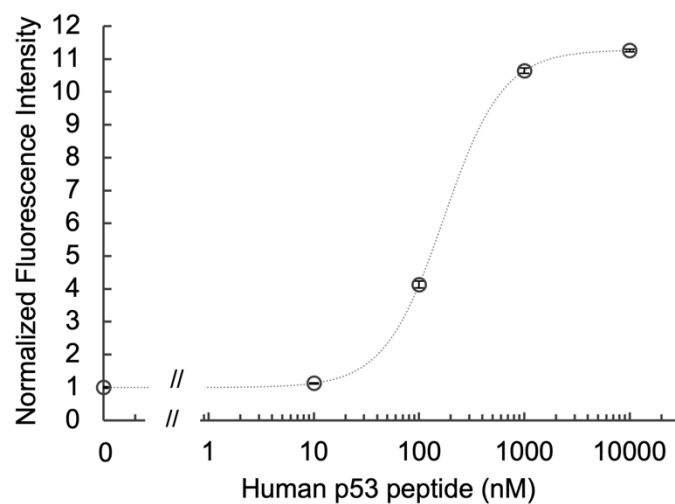
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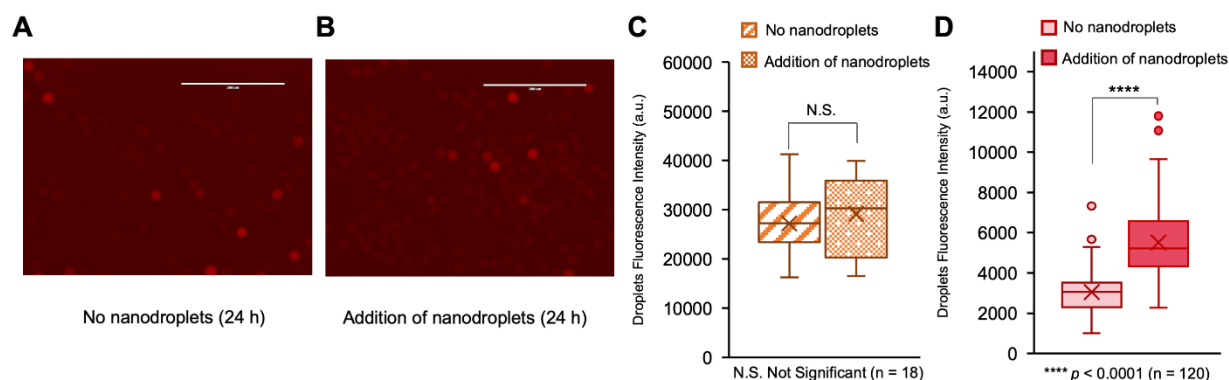
## Supplementary Figures



**Figure S1.** Confirmation of the p53 peptide delivery with p53 Quenchbody in droplets. Incubation of mixed microdroplets (90% sensor droplets and 10% maximum-response droplets) in absence of peptide nanodroplets (A) or in the presence of peptide nanodroplet (B) after 3 h. Scale bar, 200  $\mu\text{m}$ .



**Figure S2.** Dose-dependency of p53 Quenchbody immunosensor in PBS buffer. Quenchbody concentration: 60 nM; n = 2; Open circle, data points. Dot line, fitting curve, Minimum: 1.00, Maximum: 11.3, EC50: 171 nM, hill slope: 1.54. Data are shown as mean  $\pm$  standard deviation.



**Figure S3.** Nanodroplet-based peptide delivery into water-in-fluorocarbon microdroplets after 24 h incubation. The maximum-response droplets (microdroplets co-encapsulated with sensor and 10  $\mu$ M p53 peptide) are spiked into the sensor droplets (microdroplets with encapsulated sensor only) as internal control during fluorescence imaging. (A) Incubation of mixed microdroplets (90% sensor droplets and 10% maximum-response droplets) in the absence of nanodroplets after 24 h. (B) Incubation of mixed microdroplets with p53 peptide-containing nanodroplets after 24 h. Scale bar, 200  $\mu$ m. (C) Box plot of fluorescence intensity of the maximum-response droplets after 24 h incubation. (D) Box plot of fluorescence intensity of sensor droplets after 24 h incubation. Box plots indicate the median (centre line), mean (cross), first and third quartiles (box edges) and full data ranges (whiskers), and outlier (circles). The level of significance was determined by two-tailed Welch's *t*-test.