((Supporting Information can be included here using this template))

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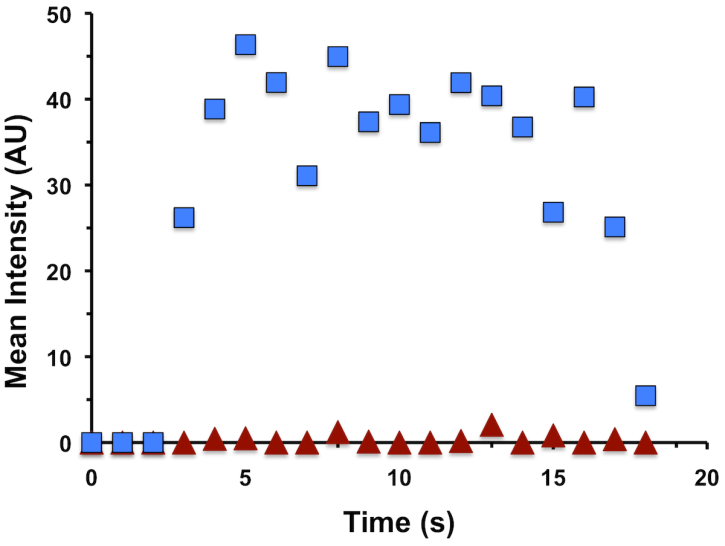
Supporting Information

Selective Vaporization of Superheated Nanodroplets for Rapid, Sensitive Acoustic Biosensing

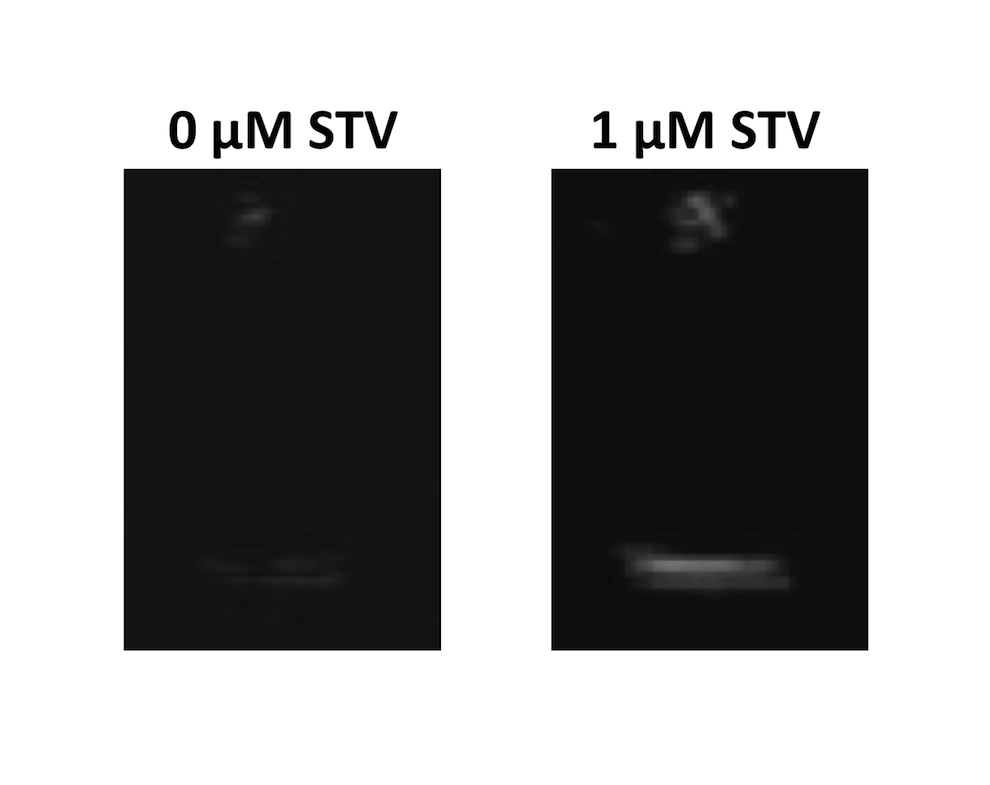
Rajarshi Chattaraj, Praveena Mohan, Jeremy D. Besmer, and Andrew P. Goodwin\*

**Table 1.** Mean size and droplet stock concentration as measured by Nanoparticle Tracking Analysis vs. droplet centrifuge fractionation speed.

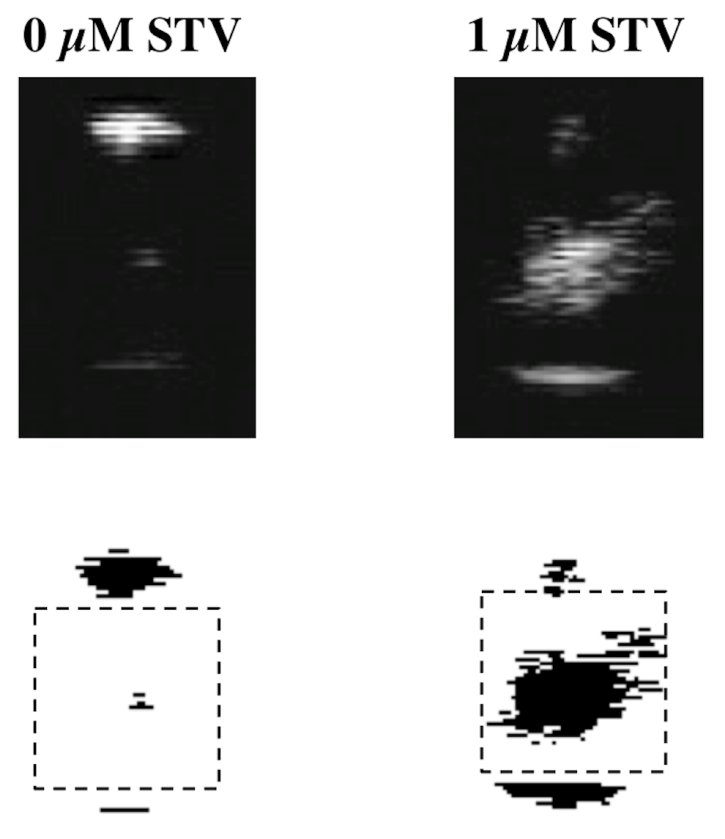
|  |  |  |
| --- | --- | --- |
| Centrifuge fractionation speed (x *g*) | Mean droplet size (nm) | Approximate droplet concentration (mL-1) |
| 400 | 367.6±2 | 2.8x1011 |
| 300 | 435.3±20 | 3.5x1011 |
| 200 | 485.6±20 | 6.0x1011 |
| 0 | 609.1±8 | 12.8x1011 |



**Figure S1.** Mean brightness vs. time from HIFU pulsing of droplets as function of time. HIFU is pulsed from 3-17 s. Blue squares indicate 1 µM streptavidin loading; red triangles indicate no streptavidin loading.



**Figure S2.** Still images of Neobee oil droplets after HIFU pulsing with either no or 1 µM streptavidin.



**Figure S3:** Examples of image processing using ImageJ. Top: still image from video file. Bottom: image after ImageJ processing; dashed rectangle indicates ROI.