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Title: Electrode-free picoinjection of microfluidic drops

Electronic Supplementary Information:

PCR reactions

Total RNA was isolated from the MCF7 human breast cancer cell line. RNA was encapsulated in an aqueous buffer emulsified in FC40 oil with 5% (wt/wt) surfactant.[1] Picoinjected RT-PCR reaction buffer was prepared using Superscript One-Step RT-PCR reagents (Invitrogen, Carlsbad, CA). Primers used for amplification of transcript RefSeqNumber NM_002354 were as follows:

Forward, 5'- AGTTGTTGCTGGAATTGTTGTG-3';

Reverse, 5' CCTATGCATCTCACCCATCTC- 3'.

A volume of 2X PCR reagent equivalent to the emulsified RNA drops was then picoinjected. Drops were collected in a plastic PCR tube and thermocycled offline in a T100 Thermal Cycler (BioRad, Hercules, CA). After thermocycling, PCR emulsions were broken by adding an equal volume of 1H,1H,2H,2H-Perfluoro-1-octanol. Aqueous reactions were recovered and run on an ethidium bromide stained 2% agarose gel.

1 Holtze C, Rowat AC, Agresti JJ , Hutchison JB , Angilè FE, Schmitz CHJ , Köster S, Duan H , Humphry KJ , Scanga RA, Johnson JS, Pisignano D, Weitz DA, *Lab Chip*, 2008, **8**, 1632-1639