

Supplementary Information

A Paper-in-Polymer-Pond (PiPP) Hybrid Microfluidic Microplate for Multiplexed Ultrasensitive Detection of Cancer Biomarkers

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Table S1: List of different biomarkers with their LOD and detection time

Biomarker	Device type	LOD (ng/mL)	Detection time (min)	Reference
CEA	PDMS-magnetic beads	3.1	20	1
CEA	Cotton thread-gold nanoparticles	2.32	~60	2
CEA	Paper-distance based	2	>90	3
CEA	Paper-movable valve	0.3	>120	4
CEA	Polycarbonate-electrochemical with syringe pump	0.2	<20	5
PSA	Thermometer-nanoparticle mediated	1.0	-	6
PSA	Colorimetric- nanoparticles	1.0	20 h	7
PSA	Polycarbonate- electrochemical with Syringe pump	2.0	<20	5
PSA	Gold nanoparticle- SPR	5.0	-	8
PSA	PDMS- QD encoded beads	1.0	>60	9

Breakdown of device cost to perform 8 samples with 6 replicates (i.e., 48 assays):

- Acrylic- \$1/device
- Paper- \$0.09/device
- Reagents including Antibody-\$2.9/device

Total: \$3.99/device; \$0.08/assay

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