SNP genotyping of unpurified PCR products by sandwich-type affinity electrophoresis on a microchip with programmed autonomous solution filling

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Electronic Supplementary Information

1. Movie of the programmed autonomous solution filling of the microchip that is described in the main text (PASF1.mpg, 70× accelerated)

2. Movie of 2-step programmed autonomous solution filling of another microchip (PASF2. mpg, 20× accelerated)

The microchip design is described below.

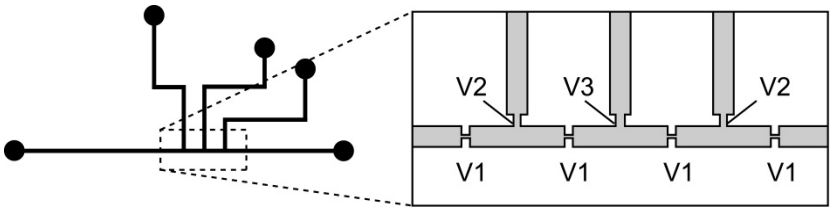

Figure S1. Design of the PDMS–glass hybrid microchip for testing 2-step programmed autonomous solution filling technique (not to scale). The microchannel has a basic width of 100 μm and a uniform depth of 25 μm. The microchannel has primary, secondary, and tertiary stop valves denoted by V1, V2, and V3, respectively. Among them, V3 is the widest (20 μm), therefore V3 bursts first. V2 (14 μm wide) burst next. V1 (6 μm wide) retain the menisci until completion of the filling process.

3. Results of direct sequencing

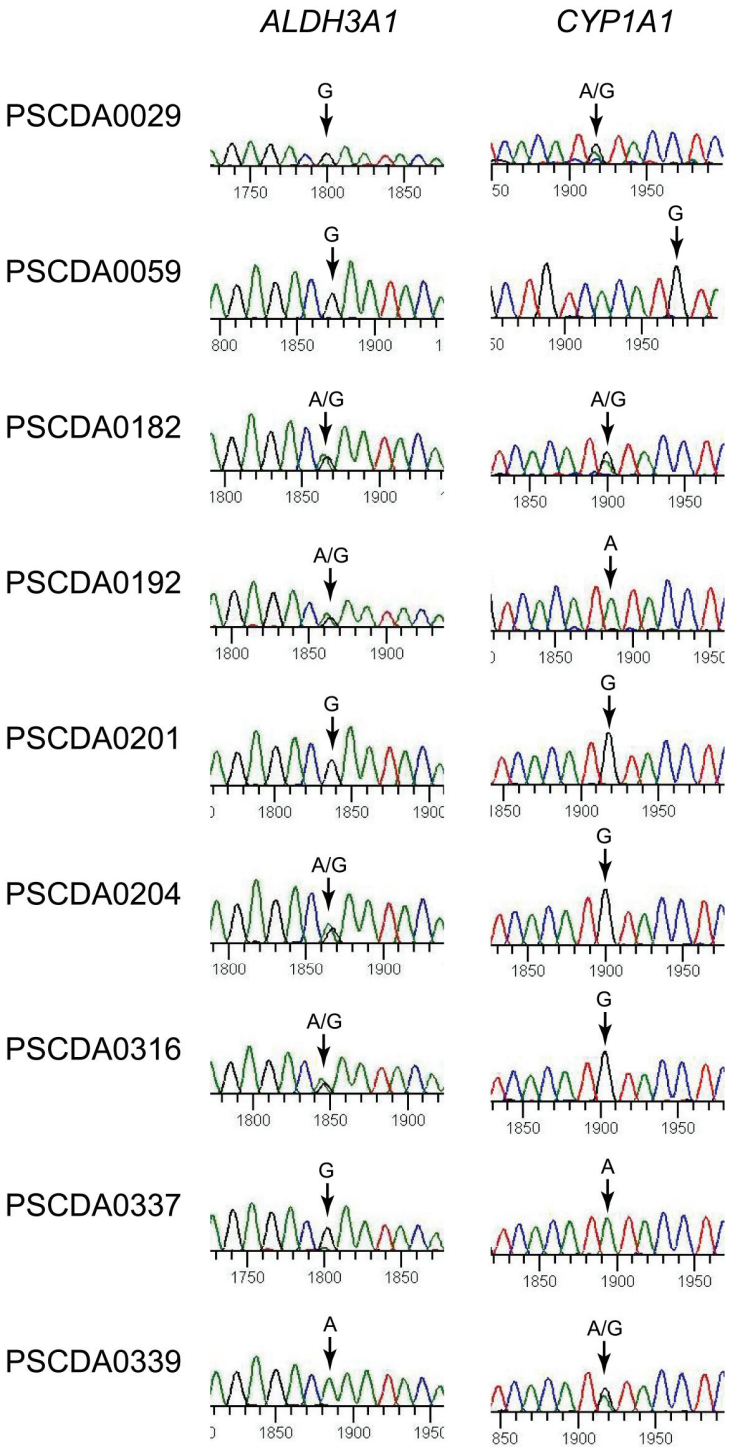

Figure S2. Results of direct sequencing. The target regions were PCR-amplified with the following primers: *ALDH3A1* (477 bp) forward 5′CAT ACT GTG TCC CAT CGG3′ and reverse 5′TCC CCA TAT CTG AGC CAC TGT3′, and *CYP1A1* (321 bp) forward 5′GTC CTA CCC ACC ACA CTT AGG A3′ and reverse 5′TCC TGT CCC CTA TCT CTT CCT C3′. Sanger sequencing reactions were carried out with the forward primers. The products were analyzed using a DNA sequencer (ABI 3730xl).