

Supplementary Information

A Reconfigurable Microfluidic Building Block Platform for High-Throughput Nonhormonal Contraceptive Screening

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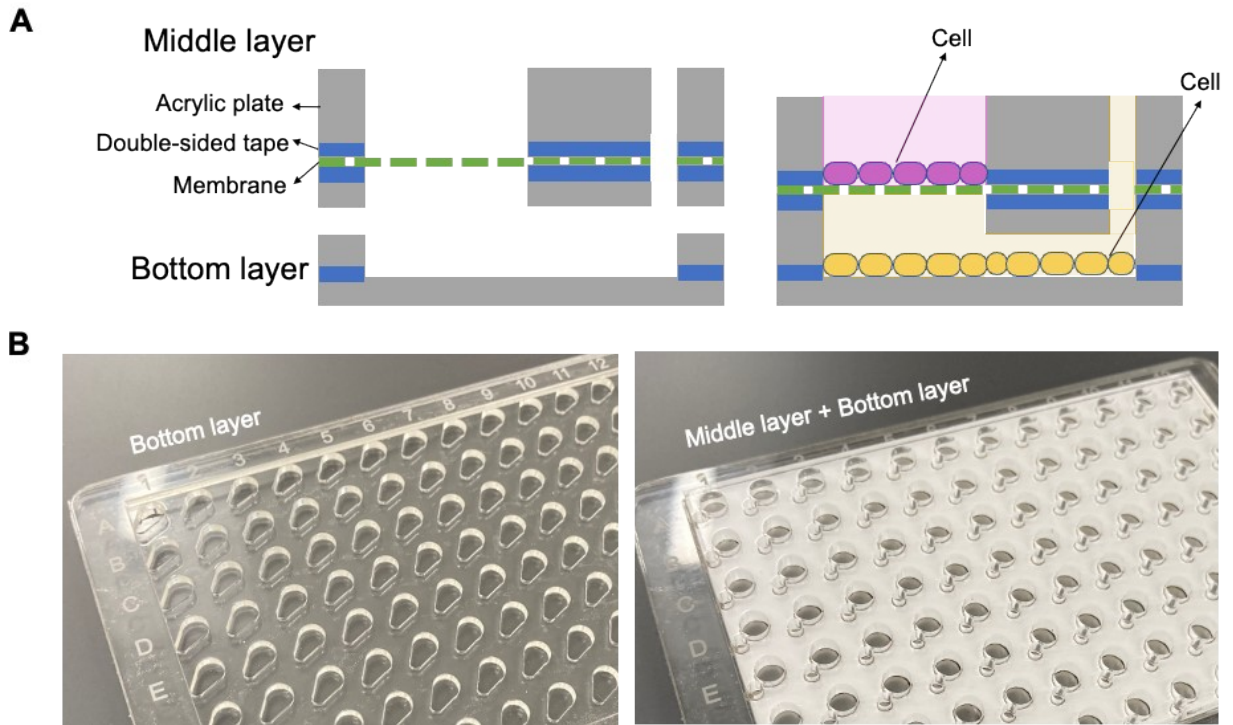
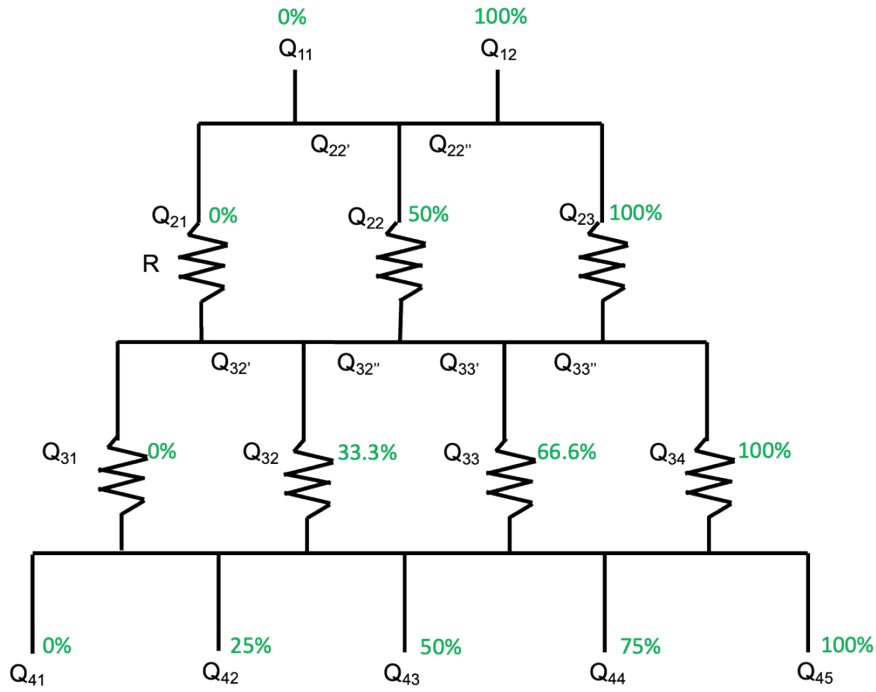


Figure S1. Transwell device design. A) Cross-sectional view of the transwell design (single well). B) Photographs of the middle layer (microwells with an embedded membrane) assembled on the bottom layer.



$$Q_{11}=Q_{12}=Q$$

$$Q_{21}=Q_{22}=Q_{23}= 2/3 Q$$

$$Q_{31}=Q_{32}=Q_{33}=Q_{34}= 1/2 Q$$

$$Q_{32}'=Q_{21}-Q_{31}= 1/6Q=Q_{33}''$$

$$Q_{32}''= 1/3 Q=Q_{33}'$$

$$Q_{41}=Q_{42}=Q_{43}=Q_{44}= Q_{45} = 2/5 Q$$

$$Q_{42}'= Q_{31}-Q_{41}= 1/10 Q= Q_{44}''$$

$$Q_{42}''= Q_{42} - Q_{42}'= 3/10 Q= Q_{44}'$$

$$Q_{43}'= Q_{43}''=1/5Q$$

$$C_{ij}=(Q_{ij}'/Q_{ij})C_{i-1,j-1}+ (Q_{ij}''/Q_{ij})C_{i-1,j}$$

Figure S2. Equivalent circuit model of the chemical gradient generator.