

- 1 **Figure S1.** Schematics of the microfluidic device. Dimensions of key components are provided.
2 Traps are numbered from left to right (1-16).
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4 **Figure S2.** CAD file microfluidic chip components.
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6 **Table S1.** Template for matrix screen. In the 'Solutions' tab, the instructions detail how to
7 prepare the dilutions of the matrix components (agarose, fibrinogen, thrombin and laminin) and
8 cells. The "Plate setup" tab contains instructions on how to pipette the different solutions to
9 obtain all possible hydrogel conditions.
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11 **Table S2.** Operating conditions of the microfluidic chip, detailing media flow, inlet and valve use
12 for each operation.
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14 **Table S3.** Troubleshooting. Table contains a list of the common issues encountered and steps
15 taken to overcome them.
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