

Supplementary materials

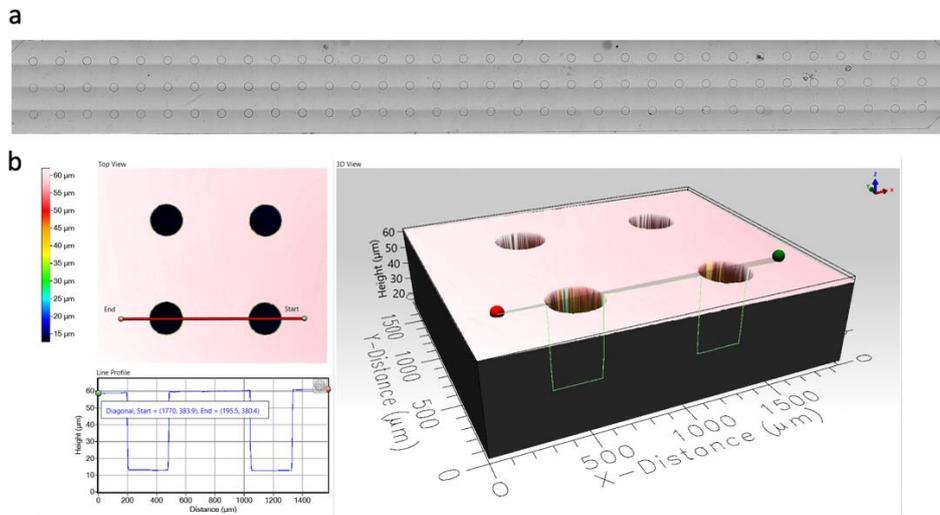


Figure S1. Construction of the SU-8 microwell array on the glass substrate. **(a)** Microwell array of 34 x 3 wells constructed in the resin SU-8 using UV photolithography. **(b)** The microwells have a diameter of 300 μm and a depth of 50 μm .

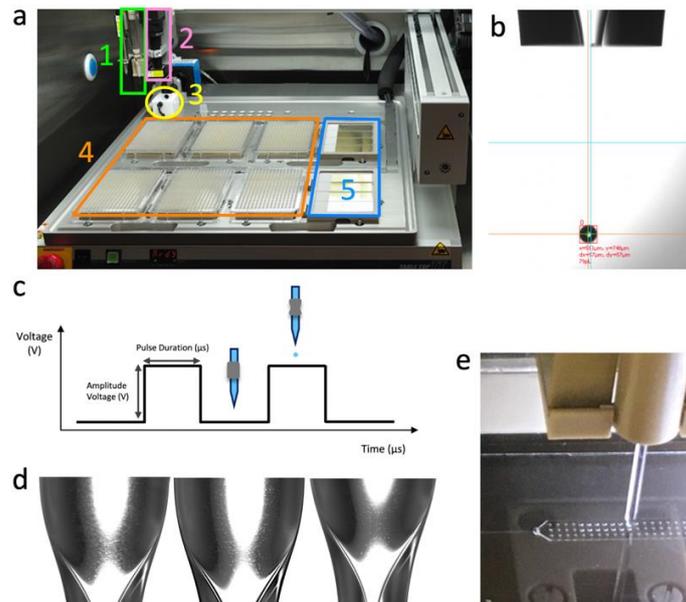


Figure S2. The robotic piezo dispenser. **(a)** Robot cell printer: (1) piezo dispenser, (2) head camera, (3) wash station, (4) source plates, (5) target bottom microwell array plates. **(b)** Piezo droplet volume range of 70-80 pL (pulse duration of 15 μs , amplitude voltage of 75 V, and frequency of 50 Hz). **(c)** Pulse generation during piezoelectric dispensing. **(d)** Yeast cells in the piezo capillary tip: OD_{600} of 0.8 (left panel), 0.5 (middle panel), and 0.2 (right panel). **(e)** Piezo dispensing into the microwells of the microfluidic chip.

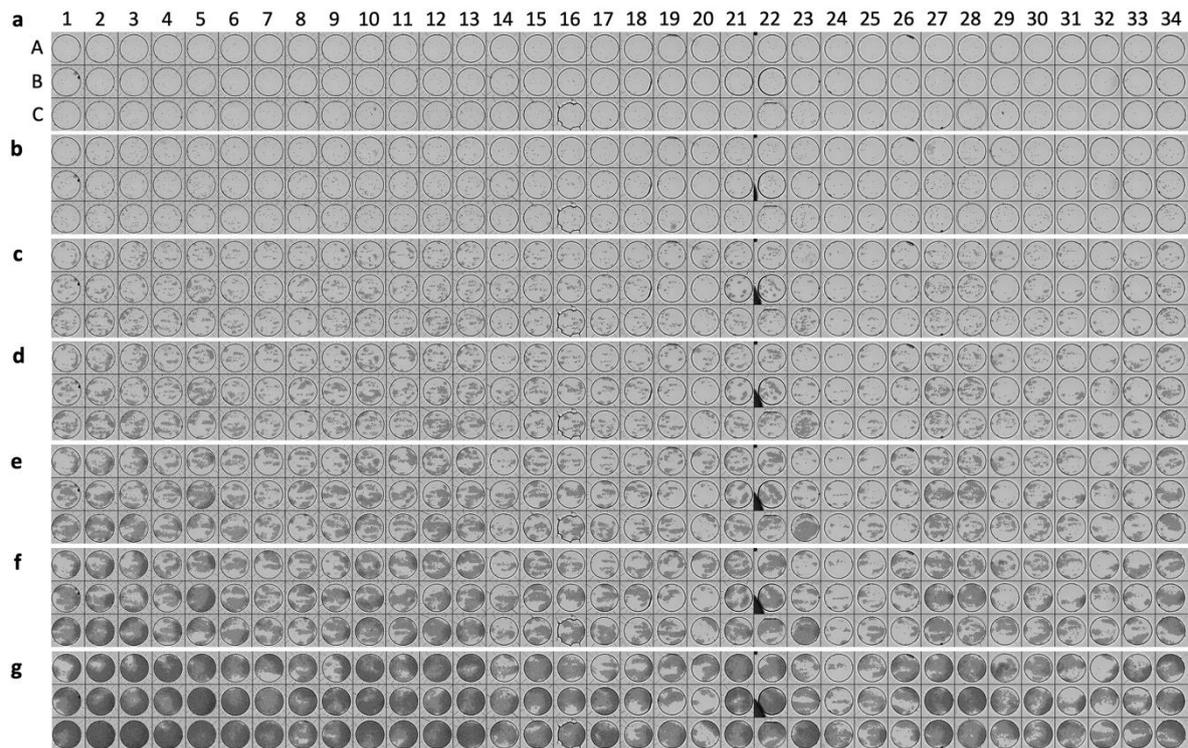


Figure S3. Growth of yeast cells in the microfluidic chip. Each column well (from 1 to 34) contains a different GFP yeast clone, which are present in triplicate (row well A, B and C). Growth of the cells in the microwells as a function of time: **(a)** at time point 0 h, **(b)** 4 h, **(c)** 8 h, **(d)** 10 h, **(e)** 12 h, **(f)** 14 h, **(g)** 18 h.

Table S1. Selected *S. cerevisiae* GFP clones that were used in the growth experiment.

Systematic gene name	Standard gene name	Name description	Cell cycle phase ¹	Localization
YNL172W	APC1	Anaphase Promoting Complex subunit	M	Cytoplasm, nucleus, spindle pole
YDR118W	APC4	Anaphase Promoting Complex	M	Cytoplasm, nucleus
YBR200W	BEM1	Bud EMergence	S/G2	Bud neck, cell periphery, bud
YNL271C	BNI1	Bud Neck Involved	G1/S/G2	Bud neck, cytoplasm
YBL085W	BOI1	Bem1 (One) Interacting protein	G1/S/G2	Bud neck, cytoplasm, cell periphery, bud
YER114C	BOI2	Bem1 (One) Interacting protein	G1/S/G2	Bud neck, cytoplasm, punctate composite, bud
YKL092C	BUD2	BUD site selection	G1	Bud neck, cytoplasm, cell periphery
YCL014W	BUD3	BUD site selection	M	Bud neck
YJL194W	CDC6	Cell Division Cycle	G1/S	Cytoplasm, nucleus
YDL017W	CDC7	Cell Division Cycle	G1/S	Cytoplasm, nucleus
YDL164C	CDC9	Cell Division Cycle	S/G2	Mitochondrion, nucleus
YCR002C	CDC10	Cell Division Cycle	S/G2/M	Bud neck, cell periphery
YJR076C	CDC11	Cell Division Cycle	M	Bud neck, cell periphery
YFR028C	CDC14	Cell Division Cycle	M	Nucleus, nucleolus

YAR019C	CDC15	Cell Division Cycle	M	Spindle pole
YKL022C	CDC16	Cell Division Cycle	M	Nucleus
YHR166C	CDC23	Cell Division Cycle	M	Nucleus
YAL041W	CDC24	Cell Division Cycle	G1/S	Cytoplasm, nucleus
YBL084C	CDC27	Cell Division Cycle	M	Cytoplasm, nucleus
YBR160W	CDC28	Cell Division Cycle	G1	Cytoplasm, nucleus
YCR093W	CDC39	Cell Division Cycle	G1	Cytoplasm
YBR202W	MCM7 (CDC47)	MiniChromosome Maintenance	G1/S	Cytoplasm, nucleus
YDL132W	CDC53	Cell Division Cycle	G1/S	Cytoplasm, nucleus
YNL298W	CLA4	CLn Activity dependant	S/G2	Cytoplasm, bud
YGR108W	CLB1	CycLin B	G2/M	Nucleus
YMR199W	CLN1	CycLiN	S/G2	Cytoplasm, nucleus
YNL068C	FKH2	ForK head Homolog	G2/M	Nucleus
YOR372C	NDD1	Nuclear Division Defective	G2	Cytoplasm, nucleus
YDL102W	POL3 (CDC2)	POLymerase	S/G2	Nucleus
YOR127W	RGA1	Rho GTPase Activating Protein	G2/M	Bud neck, cytoplasm, cell periphery
YDL225W	SHS1	Seventh Homolog of Septin	M	Bud neck, cell periphery
YER111C	SWI4	SWItching deficient	G1	Cytoplasm, nucleus
YDR146C	SWI5	SWItching deficient	G1	Cytoplasm, nucleus
YNL197C	WHI3	WHIskey	G1	Cytoplasm

¹ [66-71]