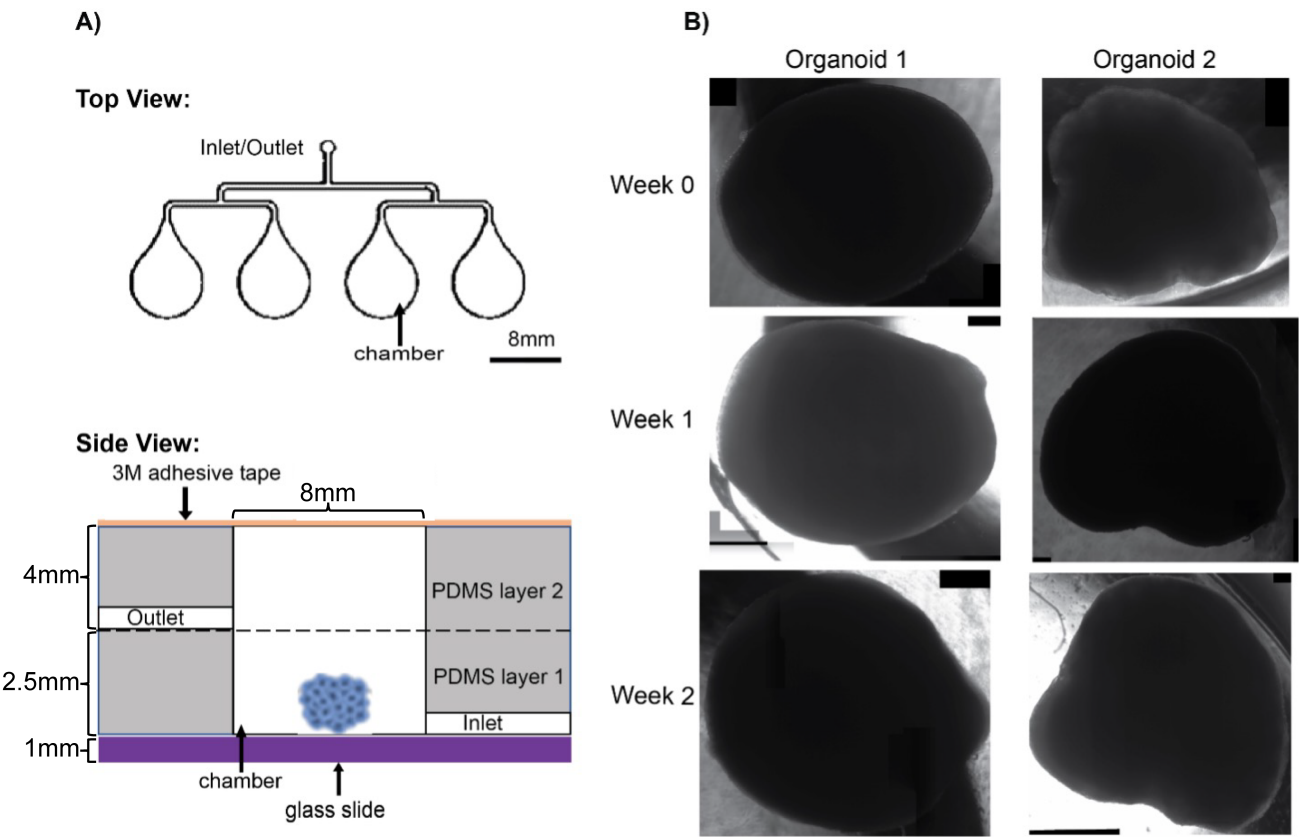


# Supplemental Material

**Table S1.** Summary of device configurations evaluated for qOBM imaging.

Platform	Width of Well, mm	Bottom Layer Height, mm	Device Volume (V)
Device (Configuration 1)	5	5	~1 mL
Device (Configuration 2)	5	2.5	~0.5 mL
Device (Configuration 3)	5	1	~0.2 mL
Device (Configuration 4)	8	2.5	~1 mL
Device (Configuration 5)	12	1	~1 mL



**Figure S1.** Device modifications allow for organoid growth and in situ qOBM monitoring. (A) Schematic of the top view of the customized microfluidic device showing design features. Scale bar: 8mm. Side view of microfluidic device setup. Two PDMS layers are bonded together and then to a glass slide. Post organoid loading, the devices are sealed with adhesive tape. (C) brightfield images of organoids cultured in customized microfluidic devices. Scale bar: 500 $\mu$ m.