## Polydimethylsiloxane-polycarbonate hybrid microfluidic device capable of generating perpendicular chemical and oxygen gradients for cell culture studies

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## **Supporting Information**



Fig. S1. The experientially measured oxygen gradients obtained using the spatially confined chemical reaction (pyrogallol+NaOH) method inside the PDMS microfluidic devices with/without an embedded PC film. In the experiments, pyrogallol solution (200 mg/ml) and NaOH (1 M) are introduced into the channel in the top layer at flow rates of 5  $\mu$ l/min for oxygen scavenging reaction. The result demonstrates that the device with even a thicker PDMS top layer (~2 cm) can only generate oxygen gradient with the lowest oxygen tension of about 5.5%. In comparison, the PDMS-PC hybrid with a thinner top layer (~ 1cm) can still achieve the lowest oxygen tension of about 1% with better gradient linearity. The result suggests the embedded PC film acts as a gas diffusion barrier that enables the efficient oxygen tension control inside the device.