

SI Table 1: Integrated processing steps on the microfluidic PLA chip. Flush cycles include washing steps.

Assay step	Duration	Conditions
Fibronectin coating	3 h	37°C, 5% CO ₂
Cell seeding	~1 h	37°C, 5% CO ₂
Cell culture, Starvation	12 h	37°C, 5% CO ₂
Stimulation, Fixation, Permeabilization, Blocking	3 h	37°C, 5% CO ₂
Primary antibodies	8 h	20°C
Secondary antibodies	4 h	20°C
Ligation	1.5 h	32°C
Amplification, Staining	4 h	32°C