

## Manufacturing of organ-on-a-chip devices based on glass, vinyl, and PDMS for cell and tissue culture

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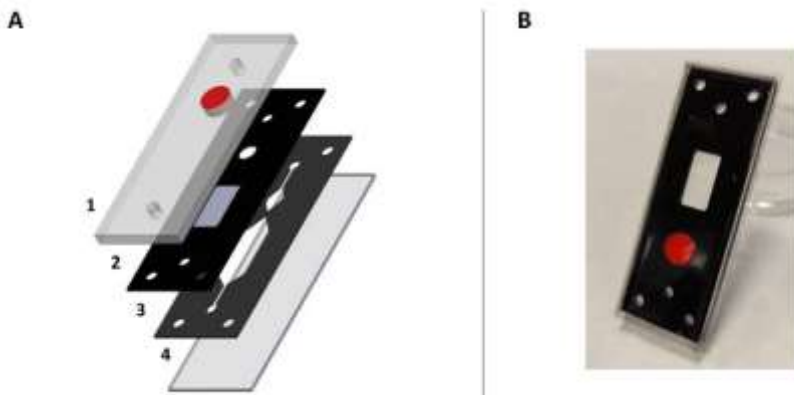
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An organ-on-a-chip is a microfluidic device capable of recreating a tissue or organ culture equivalent in a controlled micro/nanoenvironment, being able to simulate its dynamics, functionality, and/or physiological response. The main application of the organ-on-a-chip models is focused on the pharmaceutical industry to improve the safety and efficacy studies in the development of new drugs. This technology is also proposed as a future tool in the development of personalized medicine using patient-specific cells. This work presents a new organ-on-a-chip concept using vinyl for the generation of the microfluidic channels of the chip in combination with glass and polydimethylsiloxane [1,2].

### References

- [1] Herreros, P., Ballesteros-Esteban, L. M., Laguna, M. F., Leyva, I., Sendiña-Nadal, I., & Holgado, M. (2021). Neuronal circuits on a chip for biological network monitoring. *Biotechnology Journal*, 2000355. <https://doi.org/10.1002/biot.202000355>
- [2] Herreros, P., Tapia-González, S., Sánchez-Olivares, L., Heras, M. F. L., & Holgado, M. (2022). Alternative Brain Slice-on-a-Chip for Organotypic Culture and Effective Fluorescence Injection Testing. *International Journal of Molecular Sciences*, 23(5). <https://doi.org/10.3390/ijms23052549>

### Figures



**Figure 1:** (A) 3D exploded view representation of the brain slice-on-a-chip (B) Picture of the final chip version employed for hippocampal slices culture. [2]