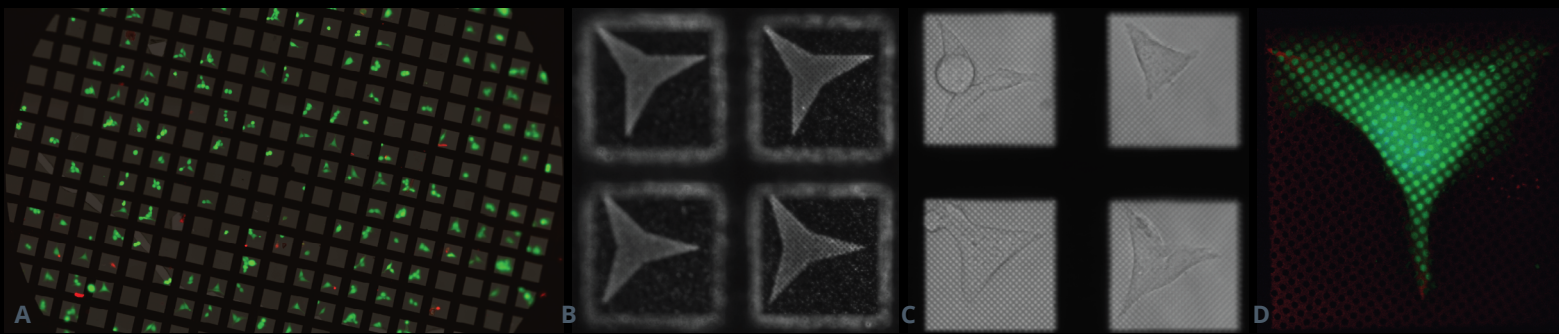


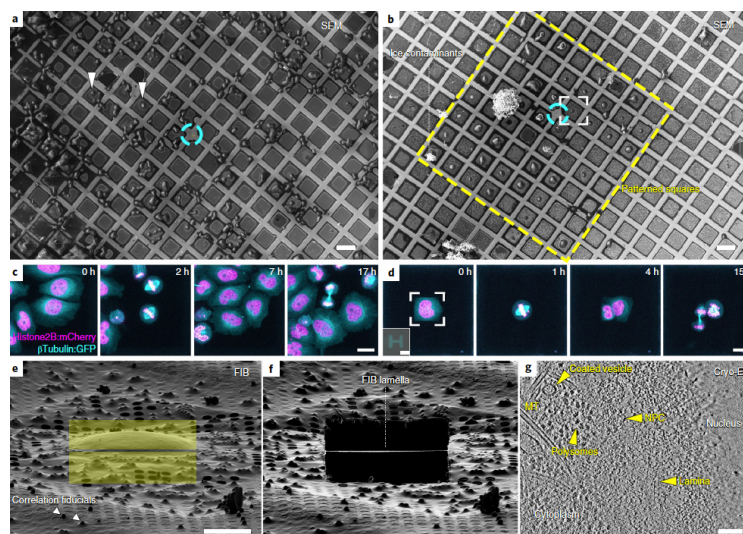
PRIMO Maskless Micropatterning

Better cell samples for cryo-ET



(A) HeLa cells grown on PRIMO micropatterned TEM grid and stained for live cells with calcein-AM (green) and dead cells (Eth-D1, red). (B) Fluorescent extracellular matrix proteins onto micropatterned TEM grid. (C,D) HeLa cells grown on micropatterned TEM grid. Courtesy of Pr Elizabeth R. Wright, University of Wisconsin-Madison.

Remove the guesswork from your cryo-ET cell samples!
With PRIMO maskless micropatterning system you get amenable cells by directly controlling cell adhesion, spreading and shape.

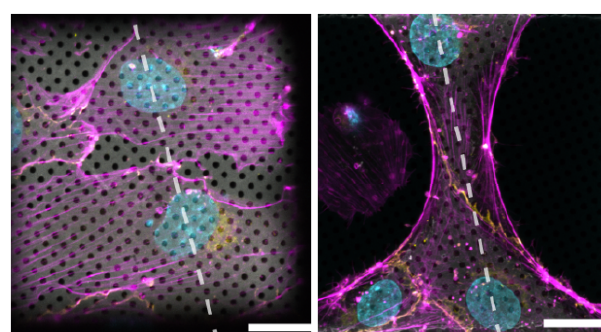


Precise cell positioning

Automatic alignment within the mesh of EM grids

(a) Without micropatterning: HeLa cells on a standard gold-mesh grid SiO₂ holey film. (b) With micropatterning: HeLa cells on a gold-mesh holey grid with 20 µm diameter disk fibronectin patterns. (c-d) HeLa cells seeded on a (c) control and (d) patterned gold-mesh grids SiO₂ holey film. FOV: one single grid square. (e) FIB shallow angle view on cell framed in b, scale bar, 10 µm. (f) Lamella produced from cell in e. (g) Tomographic slice, 6.8 nm thickness, of the nuclear periphery. NPC, nuclear pore complex; MT, microtubule. Scale bar 100 nm.

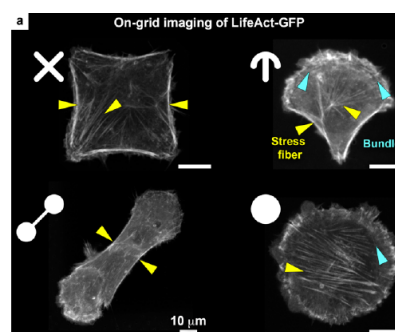
Toro-Nahuelpan et al., Nature Methods, 2019



Optimized cell spreading

Reduced thickness for advanced CLEM and cryo-ET workflows

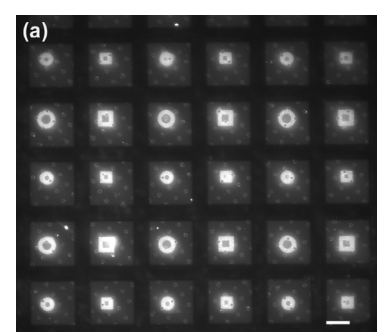
Left: Endothelial cells on EM grids blanket-coated. Right: Endothelial cells on micropatterned EM grids (controlled cell-cell contacts).
Engel, Vasquez et al., BioRxiv, 2020



Standardized cell models

Reproducible micropatterns and phenotypes

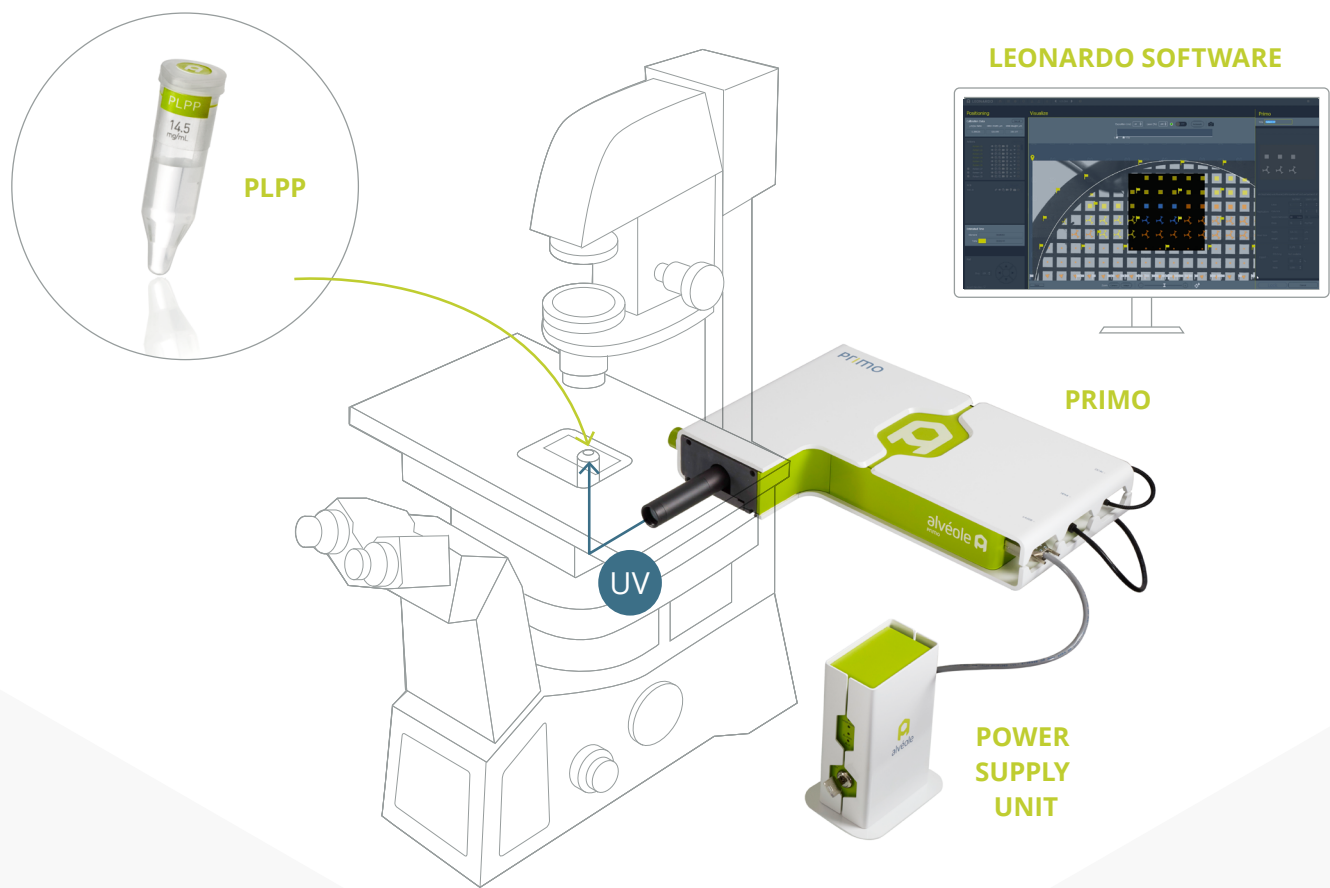
EM grid micropatterning for controlling cell morphology and cytoskeletal architecture.
Toro-Nahuelpan et al., Nat. Met., 2019



Undamaged surface

Contactless micropatterning

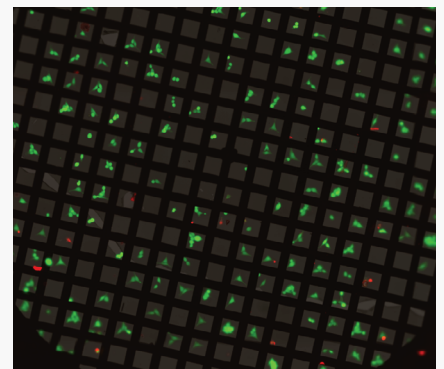
Gelatin micropatterns between the gold grid bars 200 mesh. Scale bar, 50 µm.
Engel et al., J. Micromech. Microeng. 2019



Advanced cryo-ET cell sample preparation, by Alvéole and Leica Microsystems

By fine-tuning the cellular adhesion on EM grids, PRIMO maskless micropatterning system overcomes issues linked to the very first step of the cryo-ET workflow: getting cells amenable for cryo-ET.

The integration of micropatterning, with the **PRIMO system, as a first step** to Leica Microsystems' Cryo CLEM workflows makes your cryo-ET cell sample preparation even more reliable and successful !



HeLa cells on a micropatterned TEM grid.
Courtesy of Pr Elizabeth Wright.

Whole-cell cryo-ET workflow optimized with micropatterning for higher throughput

