BioLamina

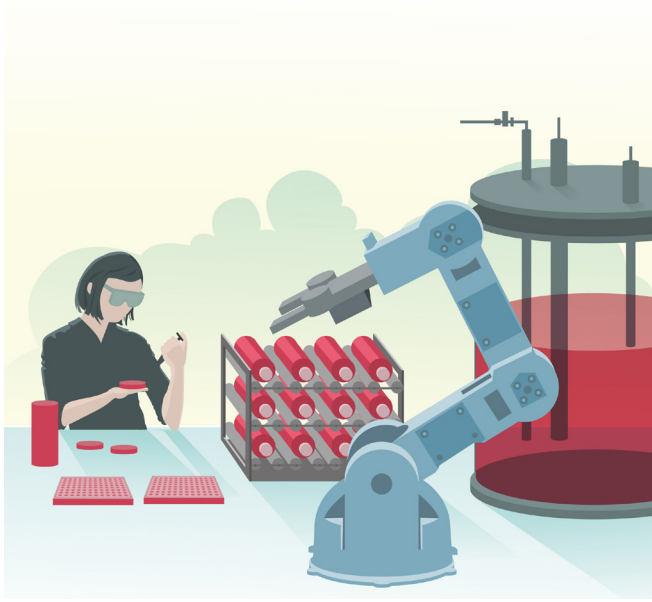
BioLamina products in research and manufacturing

Biolaminin® matrices for all steps and scales

APPLICATION OVERVIEW 022

A cell culture substrate for all formats

BioLamina products are biologically relevant cell culture substrates and scientifically proven to improve stable stem cell cultivation. Both research-grade and cell therapy grade (CTG) are available.
BioLamina products are defined, animal-origin free, and comply with clinical stage regulatory requirements. The beneficial effects of the full-length Biolaminin for cell culture can be used in any type of culturing format for every step, from microtiter plates to large scale formats, on almost all materials including glass and metal, from imaging systems to cell models.



Why use Biolaminin?

Biologically relevant
Biologically relevant support improves cell authenticity and functionality.

High expansion rate
A fast proliferation rate with maintained integrity facilitates the use of low passage cell lines for the production of clinically relevant cell numbers.

Minimized variation
High lot-to-lot consistency and uniformed pluripotency gene expression patterns enable more standardized experiments.

Effective specialization
Enhanced differentiation, cell maturation, and organization of specialized cell types such as hepatocytes, cardiomyocytes, and neurons.

Defined and xeno-free
All BioLamina products are animal-origin free, defined recombinant proteins.

Quality documentation
Animal-Origin Free Statement, Certificate of Analysis, and MSDS are available for all our products. Biolaminin CTG is designed for clinical studies.

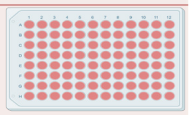
Read more about how Biolaminin substrates support all modalities and scales

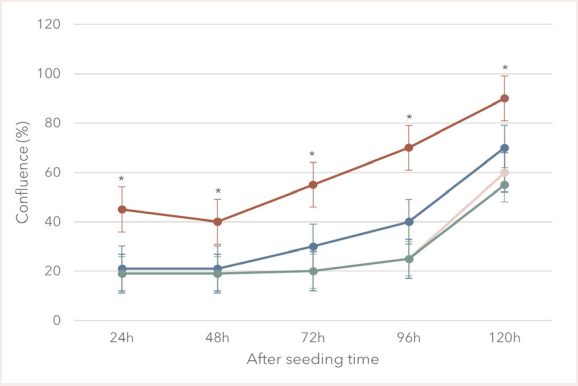
ID: AN-022-01. Valid from 2024-05-22.

BioLamina products in research and manufacturing

Biolaminin® matrices for all steps and scales

1. Microtiter plate

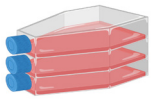


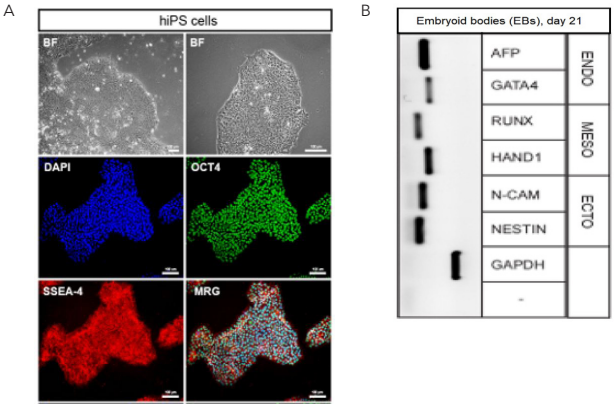


Biolaminin 521 substrate enables an robust automated imaging workflow for hPSC e.g. for gene editing. A) A high-content image analysis system assessed the best hiPSCs confluence on LN521 for gene editing in 96-well plates, compared to Matrigel, vitronectin and fibronectin [1].

hPSC clones on LN521 in 96/384-well plates result in clones that preserve pluripotency markers by nearly 100% of the cells and classical colony morphology [2].

2. Cell culture flask

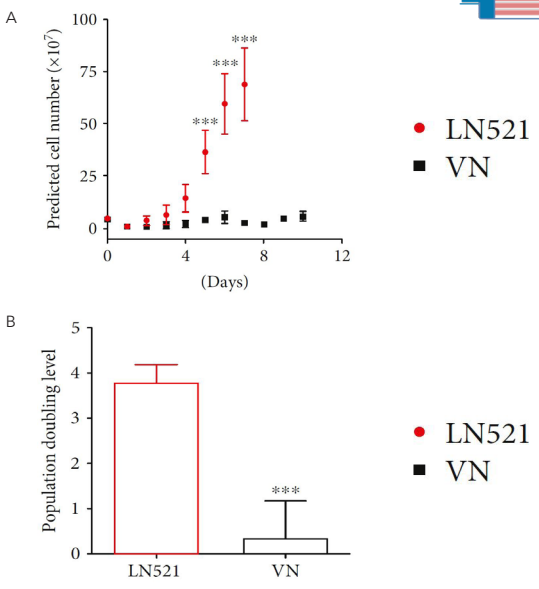




Xeno-free and fully defined protocols for iPSC generation and differentiation on Biolaminin 521.

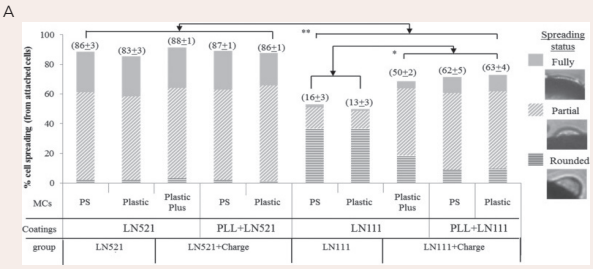
A) Representative images of fully reprogrammed homogeneous hiPSC line showing a homogeneous expression of pluripotency markers (OCT4, NANOG, SSEA4; Scale bar 100 µm). B) Pluripotency demonstrated by embryoid bodies (EB) formation assay, RT-PCR for germ layer markers at day 21 [3].

3. Hollow fiber



Biolamin 521 as potent substrate for large-scale expansion. iPSC expansion in Quantum Expansion System with porous hollow fibers (composed of PAES, PVP, and PA polymers) coated with LN521 increased significantly A) cell number, B) population doubling and maintained pluripotency, karyotype, and differentiation capability to all three germ layers [4].

4. Microcarrier



Biolaminin 521 coating of microcarriers (MC) efficiently support hESC attachment and spreading in agitated conditions, without the need for additional positive charges (PLL or Plastic Plus) .

The figure shows the high spreading efficiencies of coated MCs within 83- 88 % of rounded, partial, and fully spread cells for Biolaminin 521 with /without additional positive charges compared to LN11 which is 13- 16% without additional charges.

PS = non-porous polystyrene MCs; Plastic = porous crosslinked polystyrene MCs.

REFERENCES

[1] Magliocca et al. 2020
[2] Vallone et al. 2020
[3] Uhlin et al. 2018
[4] Mesquita et al. 2019
[5] Lam et al. 2015

ID: AN-022-01. Valid from 2024-05-22.

BioLamina

Keep in touch
E-mail **sales@biolamina.com**

BioLamina AB
Löfströms allé 5
172 66 Sundbyberg, Sweden

BioLamina Inc.,
One Broadway
MA 02142 Cambridge, USA

For more information, visit
www.biolamina.com