BioLamina
REVOLUTIONIZING CELL CULTURE

APPLICATION NOTE 002

LIF-INDEPENDENT MOUSE PSC CULTURE

MURINE STEM CELL EXPANSION ON LN511

LN511 ENABLES MOUSE ES CELLS SELF-RENEWAL IN THE ABSENCE OF DIFFERENTIATION INHIBITORS

The human recombinant laminin cell culture substrate, Biolaminin 511 LN (LN511), provides a defined and biologically relevant environment for the culture of pluripotent mouse stem cells, without the need to add differentiation inhibitors, such as leukemia inhibitory factor (LIF), to the culture medium.

Laminin 511 is the first extracellular protein to be expressed during development. Mouse embryonic stem (ES) cells adhere with about five-fold higher affinity to LN511compared to other matrices. Hence, LN511 acts as the natural niche for mouse ES cells, supporting monolayer growth of cells and ensuring uniform experimental results.

FEATURES AND SPECIFICATIONS:

- Defined and animal origin-free (primary level) substrate
- Biologically relevant mPSC culture environment
- The LN511 matrix support eliminates the need for LIF Long-term propagation of mouse ES/iPS cells
- Easy and reliable single-cell passaging for standardization and automation
- Mouse ES cells cultured on LN511 sta pluripotent for >3 months, verified by their ability to generate chimeric mice
- Scientifically proven
- For research use only

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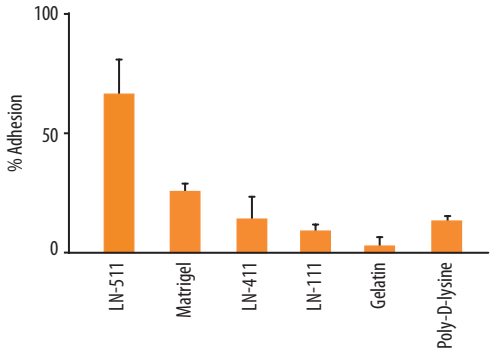
Direct link to
more information online

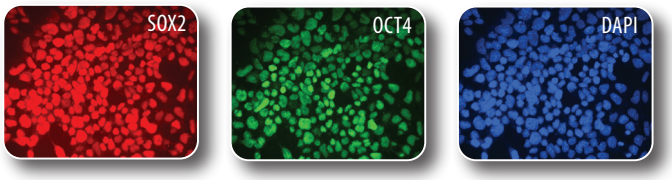
MOUSE ES CELLS HAVE HIGH AFFINITY FOR LN511

Mouse ES cells adhere to LN511 with about three- to five-fold higher affinity compared to other commonly used matrices. Values are shown as the average percentage of cells attached (*n*=3).



MOUSE ES CELLS RETAIN PLURIPOTENT CELL MARKER EXPRESSION ON LN511

Pluripotent mouse ES cells grow as monolayers on top on LN511. All cells have equal contact with the matrix and medium, creating a homogeneous cell population.



GERMLINE TRANSMISSION OF MOUSE ES CELLS CULTURED ON LN511

Mouse ES cells cultured on LN511 stay pluripotent for >3 months, verified by their ability to generate chimeric mice when injected into mouse blastocysts and implanted into pseudopregnant mice.

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REFERENCES

Laminin-511 but not -332, -111, or -411 enables mouse embryonic stem cell self-renewal in vitro. Domogatskaya et al. Stem Cells. 2008

Compositional and structural requirements for laminin and basement membranes during mouse embryo implantation and gastrulation. Miner et al. Development. 2004

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