

CASY^{VIVO} Cell Counter & Analyzer - Powering Breakthroughs in Cell Research

Laminin Matrices for Efficient Human Limbal Progenitor Cell Expansion

Polisetti et al. (2017). Laminin-511 and -521-based matrices for efficient ex vivo-expansion of human limbal epithelial progenitor cells; **Scientific Reports**, 7:5152. DOI: 10.1038/s41598-017-05152-x.

LEPC; Limbal Epithelial Progenitor Cells	
Index	SC11
Standardization	X
Counting	X
Viability	
Volume	

The Challenge:

Optimizing culture conditions for human limbal epithelial stem cells by mimicking the in vivo niche to improve ex vivo expansion and transplantation efficiency for ocular surface repair.

CASY's Contribution:

CASY provided automated, high-precision cell counts to evaluate proliferation across various laminin isoforms. The data confirmed that LN-521 and LN-511 significantly boost cell expansion while maintaining stemness, establishing these matrices as superior, biocompatible substrates for clinical-grade tissue engineering.

Key Benefits to Researchers:

- **High-Resolution Proliferation:** Delivers precise cell counts and diameter measurements across diverse isoforms without manual error.
- **Automated Growth Tracking:** Facilitates rapid, label-free monitoring of expansion kinetics essential for optimizing clinical-grade protocols.
- **Biocompatibility Validation:** Provides the objective data required to confirm that niche-mimicking laminins enhance growth while preserving the progenitor phenotype.

