Product Details

Laminin 521 (LN521) is a recombinant human protein that provides a defined surface for in vitro feeder-free culture of multiple human pluripotent stem cells (PSCs). LN521 has been proven to maintain normal growth characteristics and stemness in multiple PSC lines without simultaneous differentiation, which includes ESC, iPSC, MSC etc. In addition, LN521 has been demonstrated to support PSC growth for >10 passages without any signs of karyotypic abnormalities and to maintain the ability of PSCs to differentiate into all three germ line lineages.

We have different versions of laminin 521 protein. In most applications, laminin 521 protein (LA5-H5261) has similar performance with laminin 521 protein (LA5-H5214). However, there might be slight difference in specific applications, so it is recommended to try these two products and choose the best product. Laminin 521 protein premium grade (LA5-H5261) has the equivalent GMP version (GMP-LA5H24) with exactly the same performance, which enables a seamless transition from preclinical development to clinical phases.

Flexible & Compatible

Laminin 521 could work well in any commercial stem cell media. Meanwhile, it could support the attachment and expansion of hPSCs both in single cells or small colonies.

Stemness maintenance

Laminin 521 is the biologically relevant hPSCs extracellular matrix. It is crucial for the growth and stemness maintenance of hPSCs in human through its binding to cell receptors a6β1 integrin.

Enhance cell differentiation

Due to the diverse biorelevant environment, laminin 521 could also enhance cell differentiation, polarization and organization of target cell types, including neuron, hepatocytes, cardiomyocytes, retinal pigmented epithelial cells, pancreatic β-cells and so on.

Reduce Variability

LN521 is a defined, recombinant human protein with better lot-to-lot consistency that reduces variability in your PSC cultures.

Key parameter

Purity (SDS PAGE)	> 95%
Mycoplasma Test	Negative
Sterility Test	Negative
Integrin Binding Assay	0.5 nM < KD < 5 nM
Endotoxin Test	< 0.01 EU per μg
Host Cell Protein	< 0.5 ng/μg
Host Cell DNA	< 0.02 ng/μg

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

Storage

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

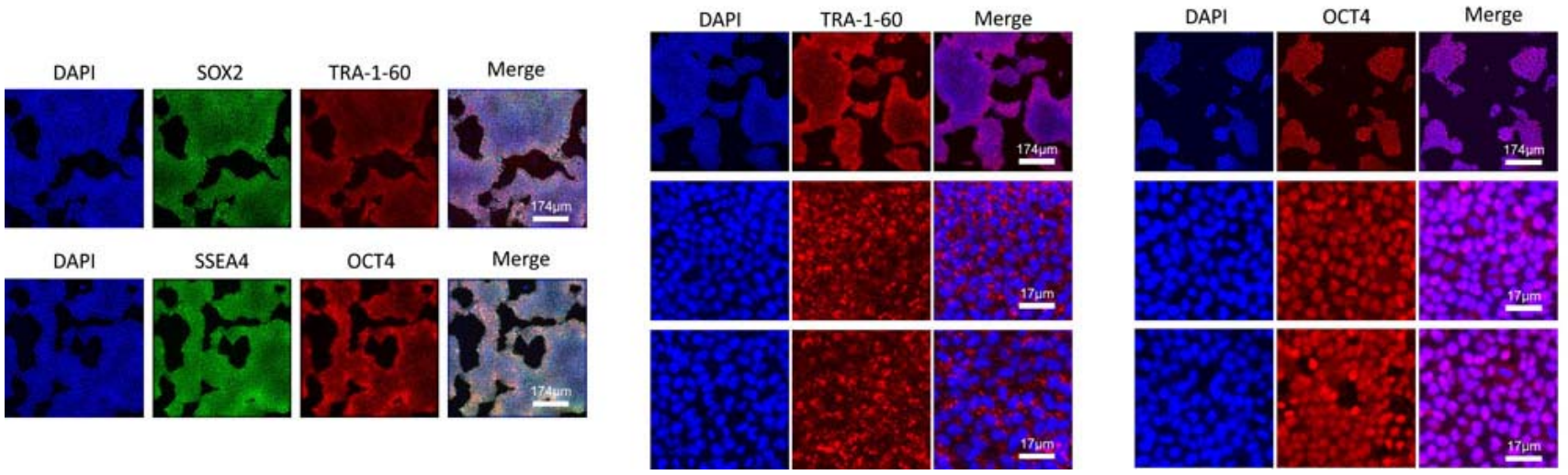
Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

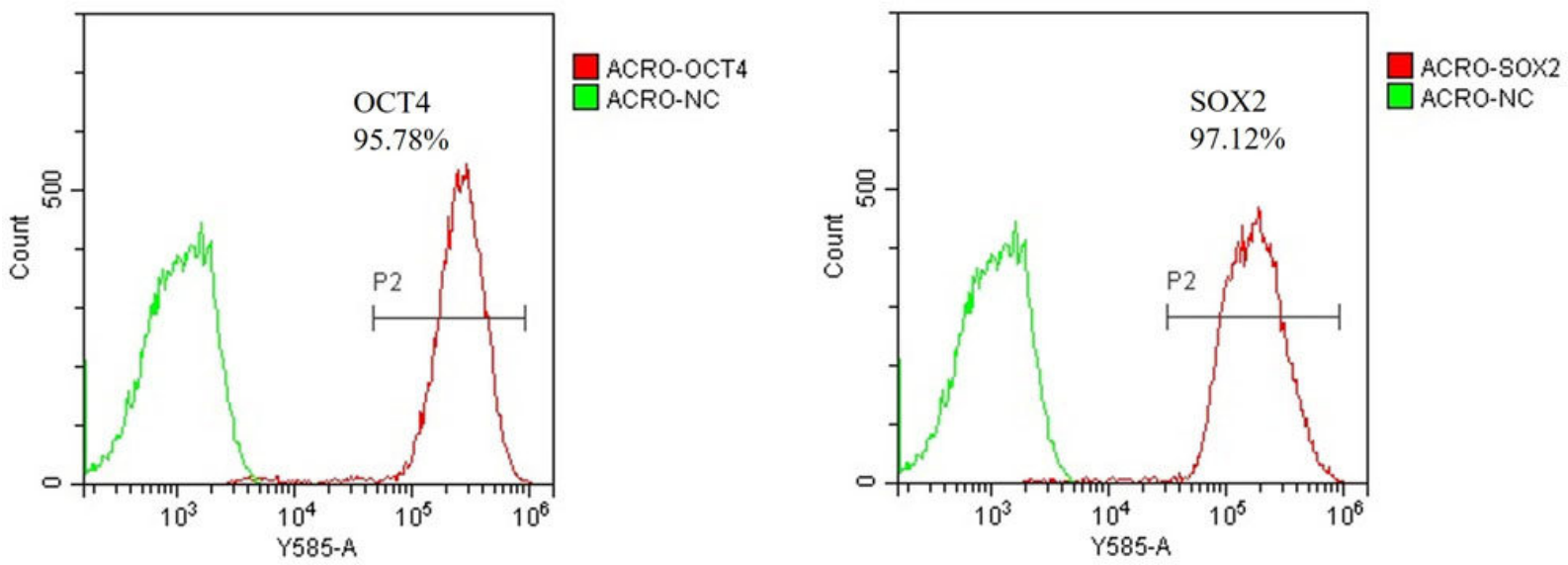
- -20°C to -70°C for 24 months in lyophilized state;
- -70°C for 12 months under sterile conditions after reconstitution;
- 2-8°C for 3 months under sterile conditions after reconstitution.

Bioactivity-Stem Cell Culture

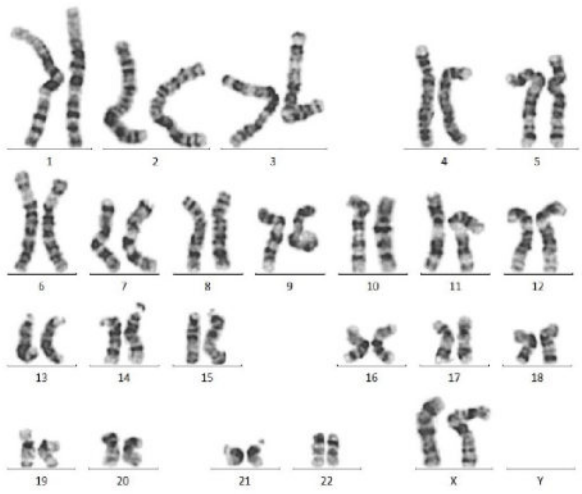
View Protocol



Laminin 521 (LA5-H5261) could maintain the stemness of iPSC at least Passage 5. Immunofluorescent staining indicated that the iPSCs expressed high levels of pluripotency associated markers Sox2, TRA-1-60, SSEA4 and OCT4.

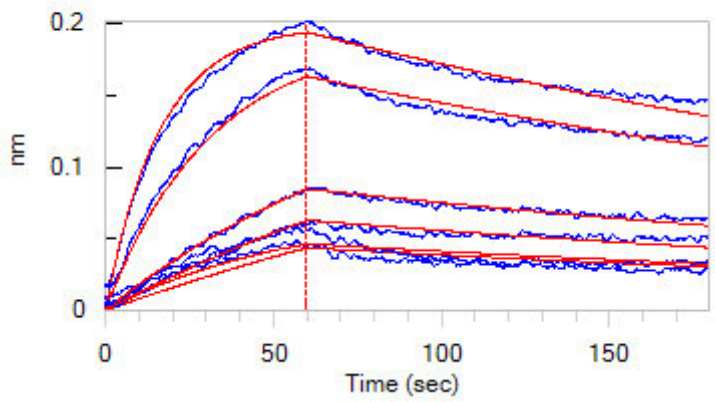


Laminin 521 (LA5-H5261) could maintain the stemness of iPSC at least Passage 5. FACS data indicated that the iPSCs expressed high levels of pluripotency associated markers OCT4 and SOX2.



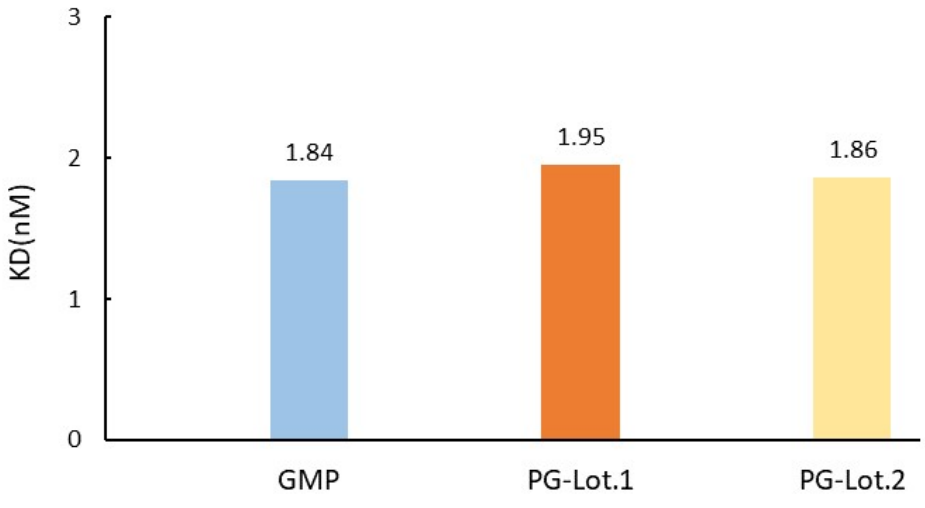
Normal karyotype (46, XX) was found in hiPSCs with Laminin 521 (LA5-H5261) coating after 10 passages.

Bioactivity-BLI



Loaded Human ITGA6&ITGB1 Heterodimer Protein, His Tag&Tag Free (Cat. No. IT1-H52W7) on HIS1K Biosensor, can bind Human Laminin 521 Protein, premium grade (Cat. No. LA5-H5261) with an affinity constant between 0.50 nM - 5.00 nM as determined in BLI assay (ForteBio Octet Red96e) (QC tested).

Bioactivity-Stability



The BLI based assay shows batch-to-batch consistency between Acro's GMP and PG Laminin 521.

Clinical and Translational Updates