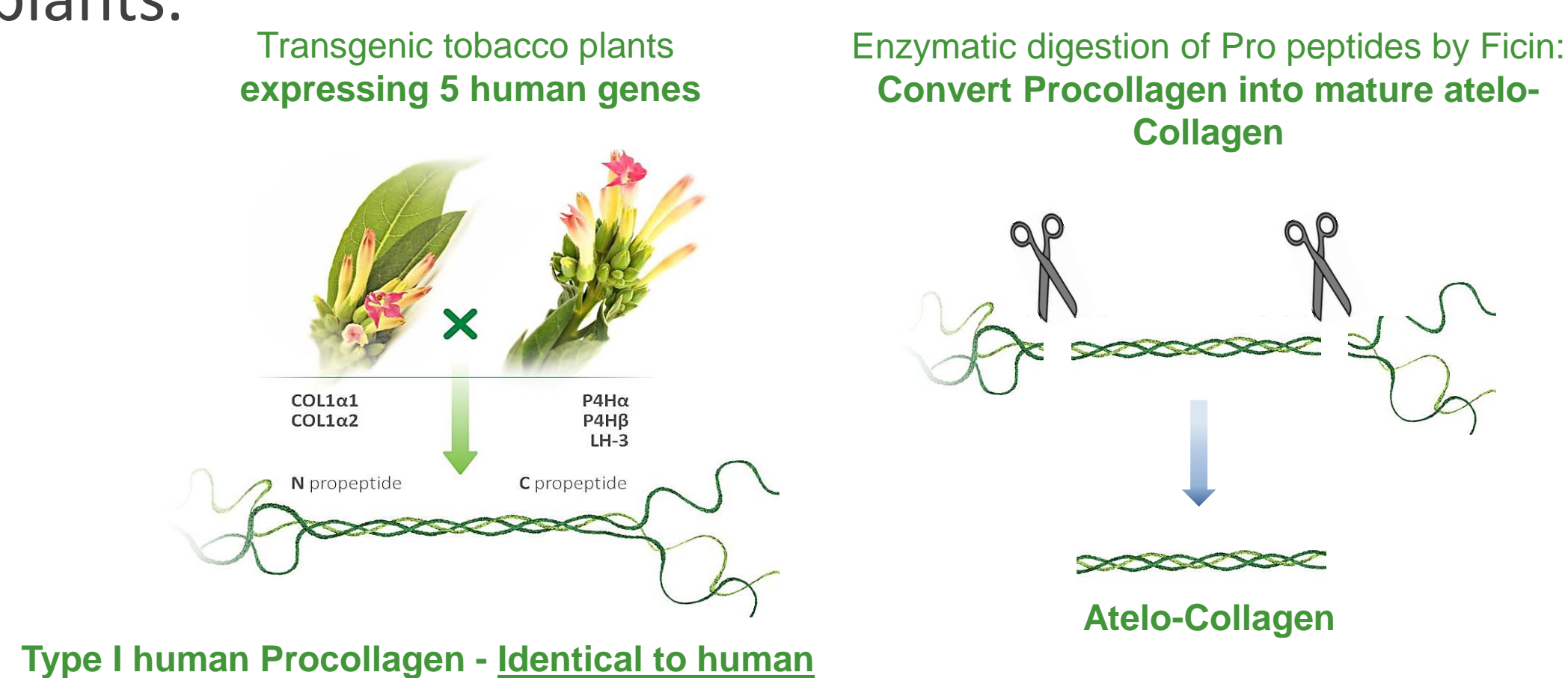


Recombinant Human Type I Collagen - a Flexible BioInk Platform for 3D-Bioprinting

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Introduction

CollPlant has generated a technology for mass production of type I recombinant human collagen (rhCollagen) in genetically engineered plants.

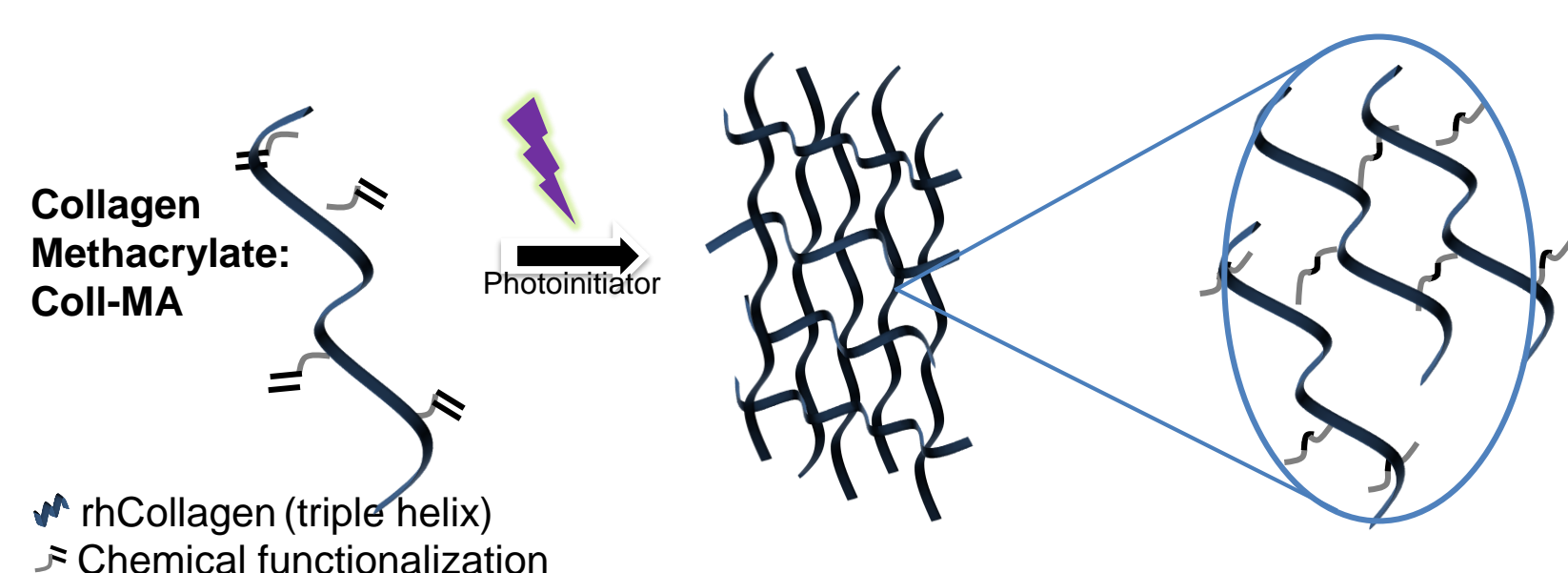


The rhCollagen is non immunogenic and less reactive than bovine collagen as evidenced in vitro and in vivo

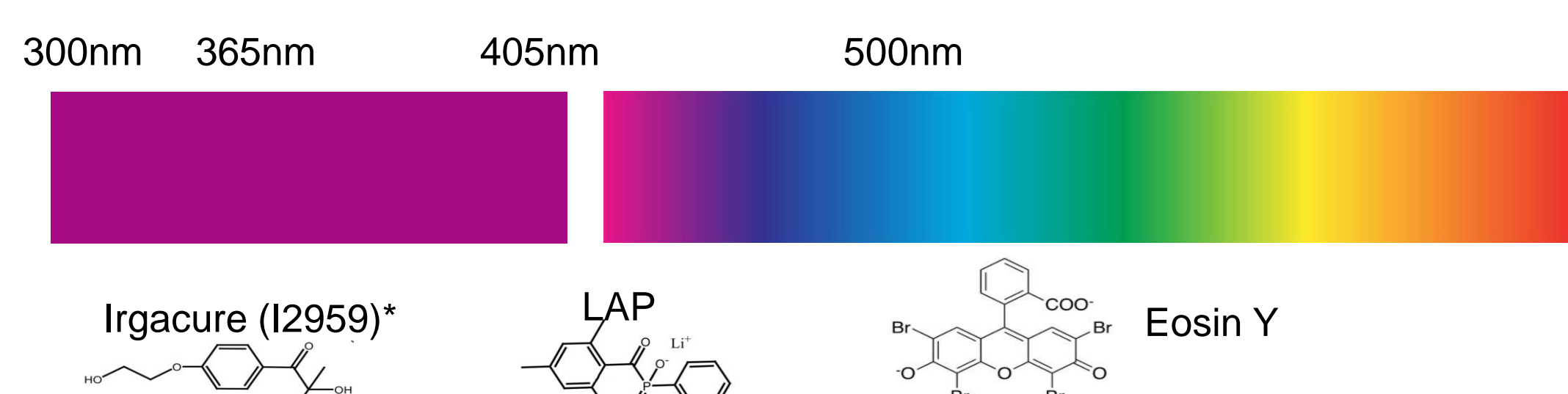
CollPlant's BioInk platform



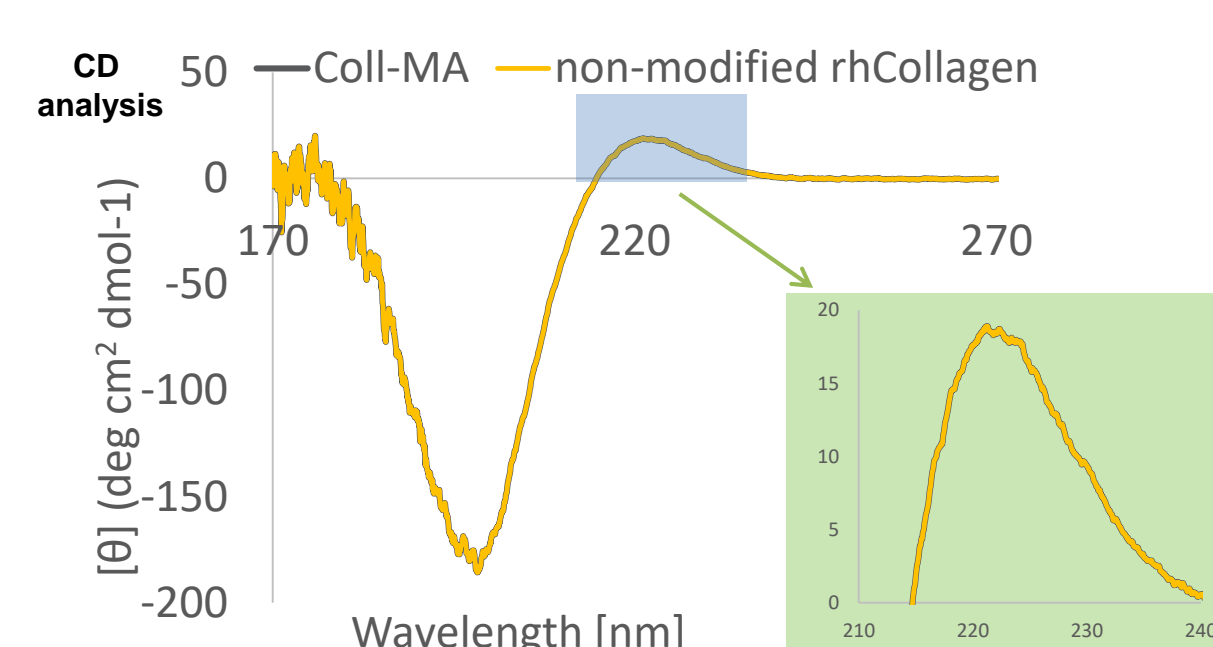
Modification of rhCollagen by methacrylation



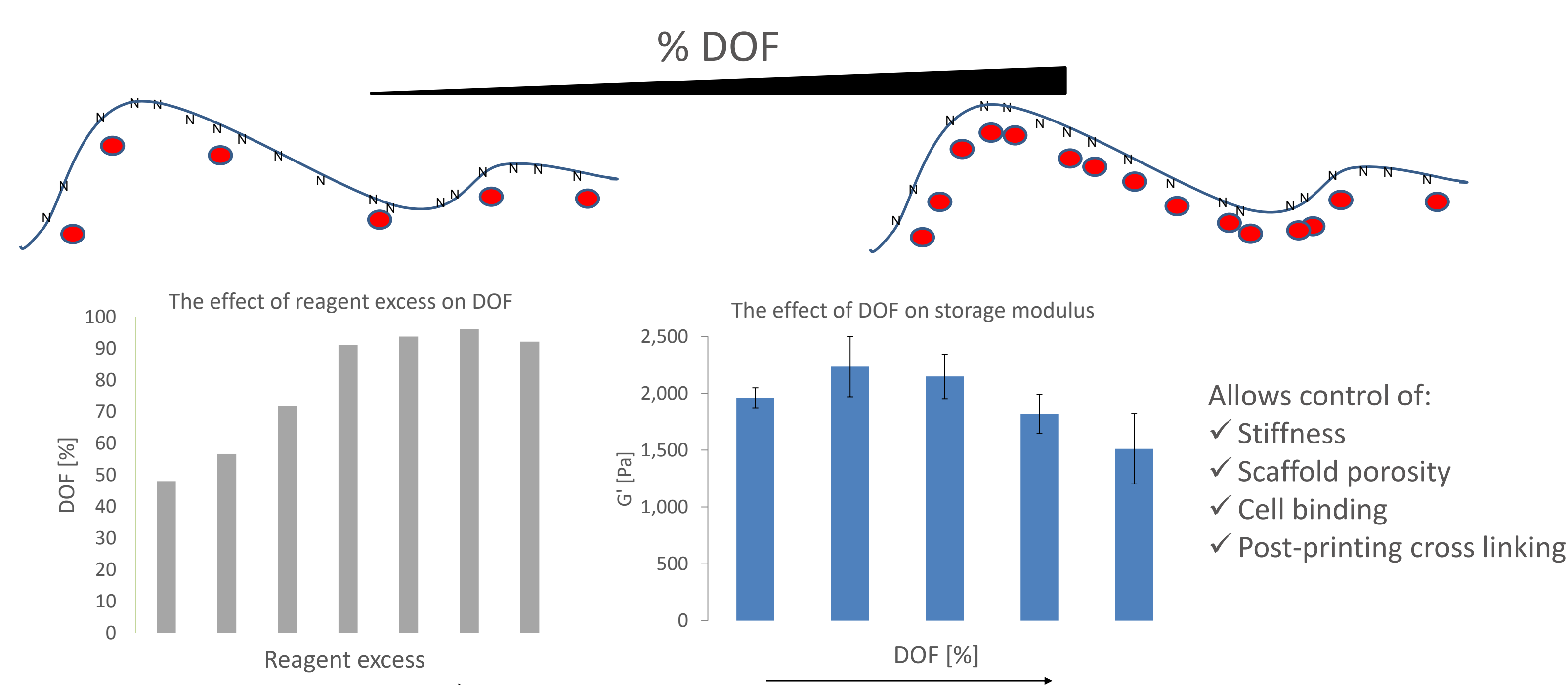
Use spectrum of photoinitiators for cross linking



Molecular stability

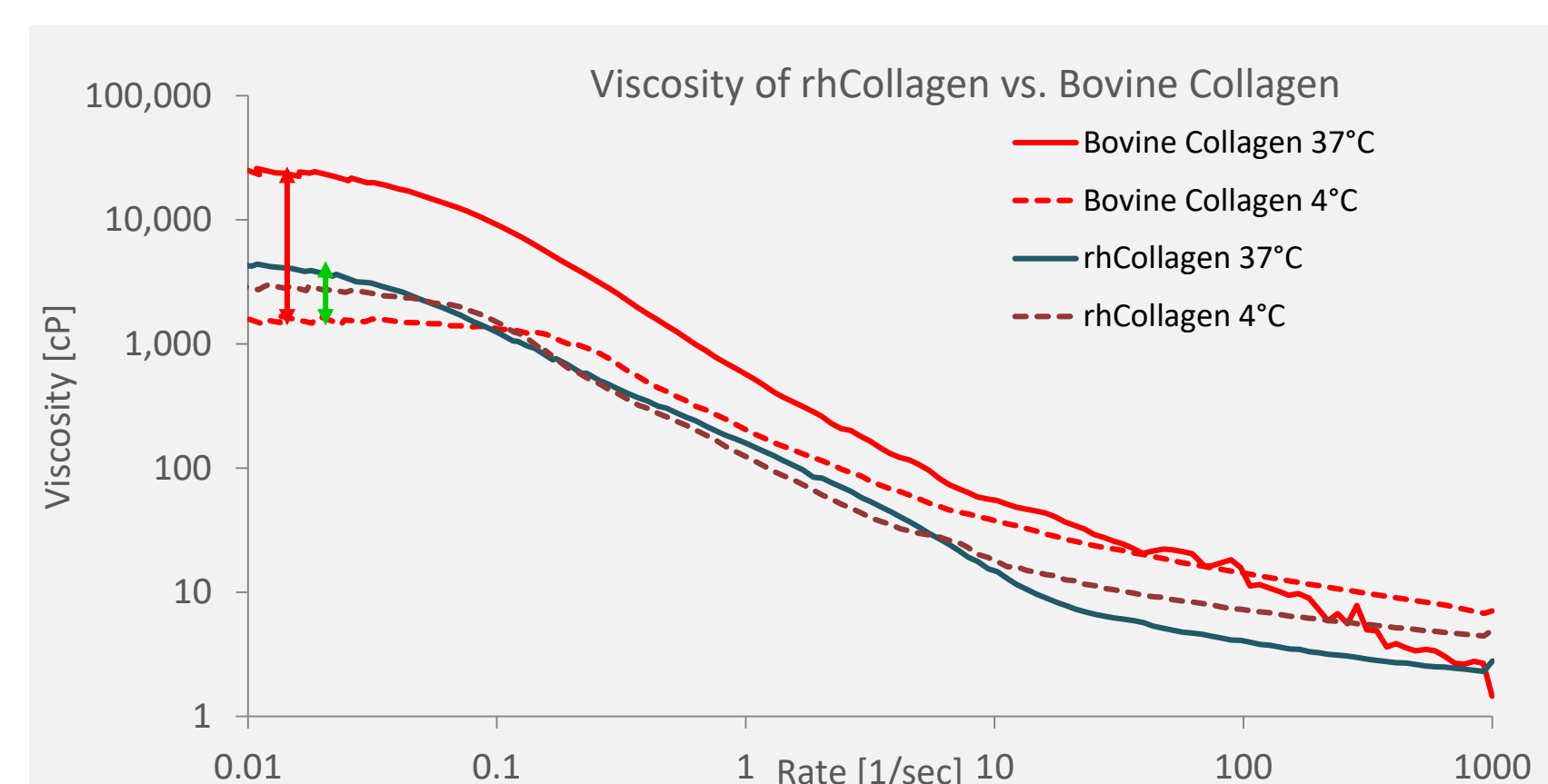


Control of the degree of functionalization (DOF)



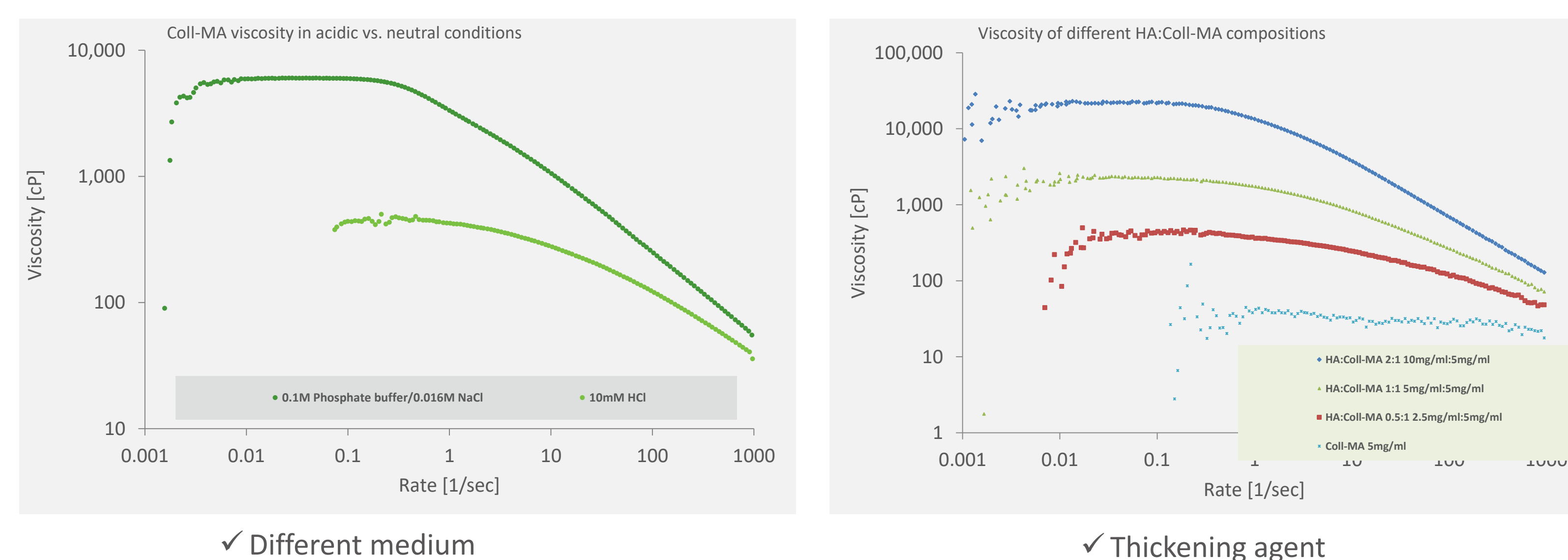
Keeps low viscosity at room temperature

Viscosity of compositions retained relatively low at room temperature and do not form gel (vs tissue extracted collagen)



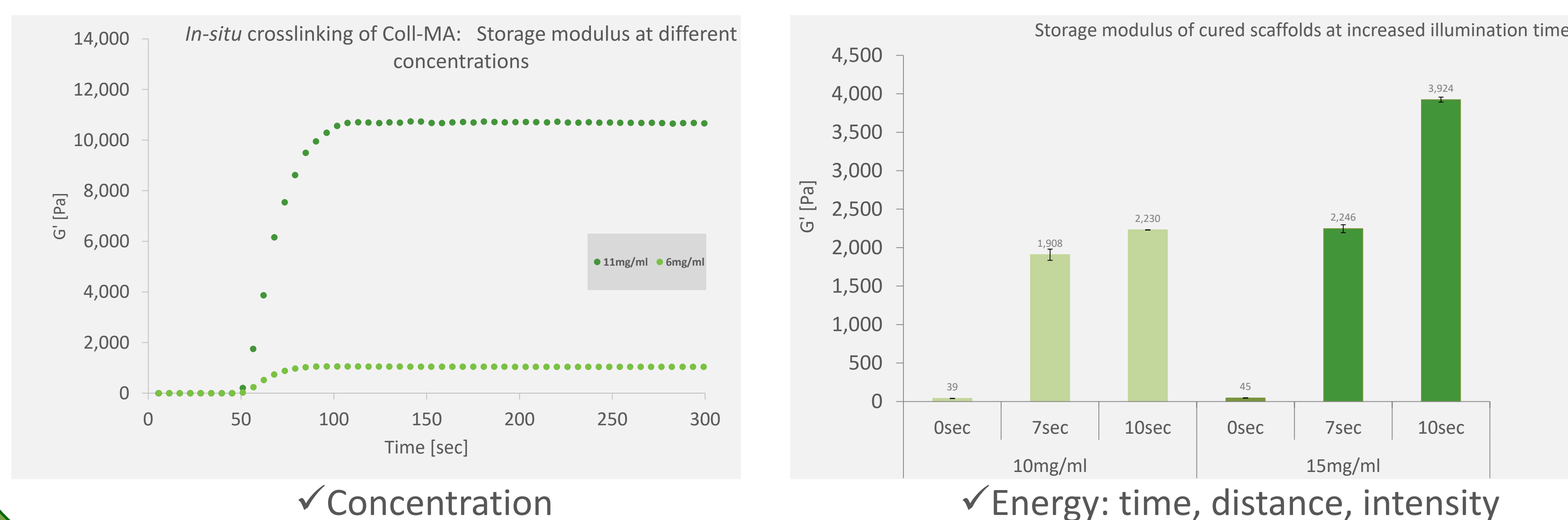
Tunable properties of the BioInk per specific needs/printing technology

Viscosity of compositions can be controlled by changing the medium (left), or by including additional components (right)



Tunable curing kinetic and final stiffness

Curing kinetics and properties of cured scaffolds can be controlled by different concentrations and energy invested during the curing process



Summary and Conclusions

- ✓ The technology allows mass production of Type I rhCollagen with batch-to-batch consistency
- ✓ Optimal rheology at wide temperature and pH ranges
 - ✓ No gelation at room temperature
 - ✓ Compatible for all major printing technologies
- ✓ Tunable physical and mechanical properties
- ✓ Biocompatible – supports over 90% viability of different cell types
- ✓ Non immunogenic, excellent safety profile