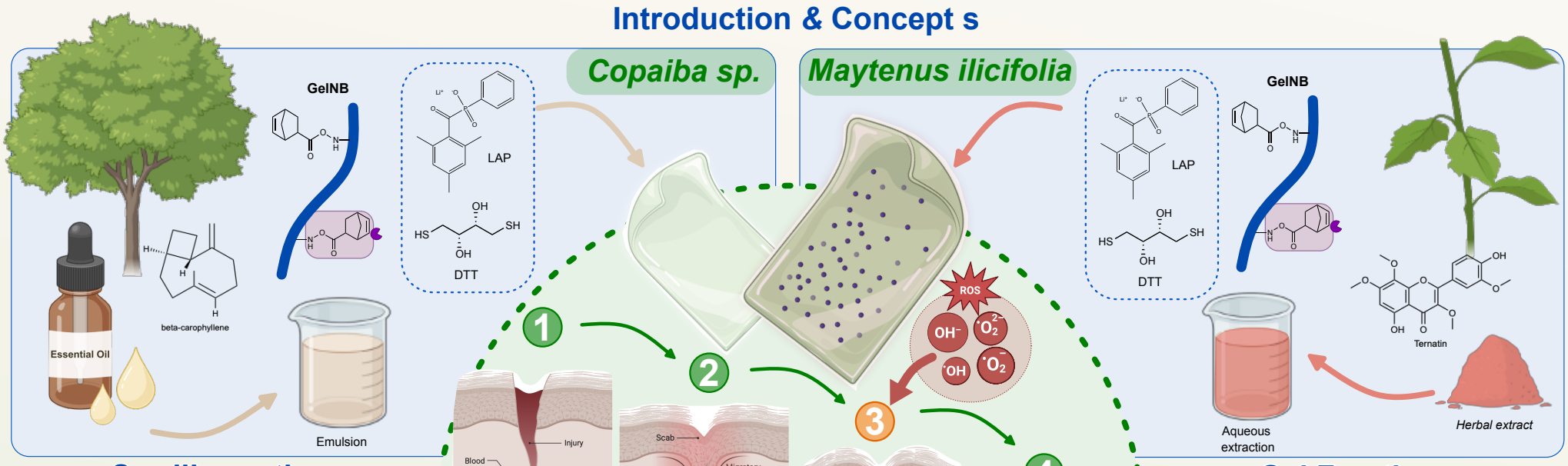
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Costão do Santinho
Florianópolis-SC

Gelatin-norbornene-based Hydrogels Incorporating Natural Bioactive Mixtures: Influence on Crosslinking Efficiency

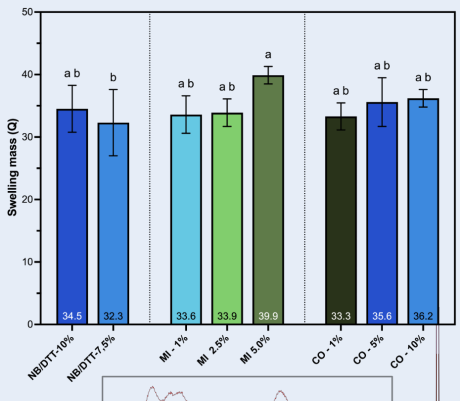
Iago Aguiar Dias Carmo[1,2], Sandra Van Vlierberghe[2], and Roniérik Pioli Vieira[1]

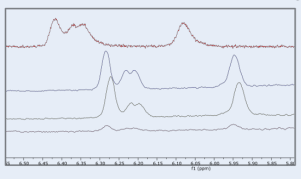
[1]*Universidade Estadual de Campinas (UNICAMP), School of Chemical Engineering (FEQ), Brazil*
[2]*Polymer Chemistry and Biomaterials Group (PBM), Ghent University (UGent), Belgium*

Introduction & Concept s

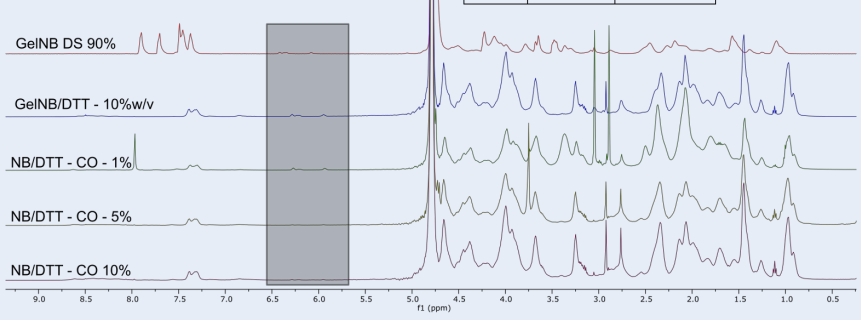


Swelling ratio

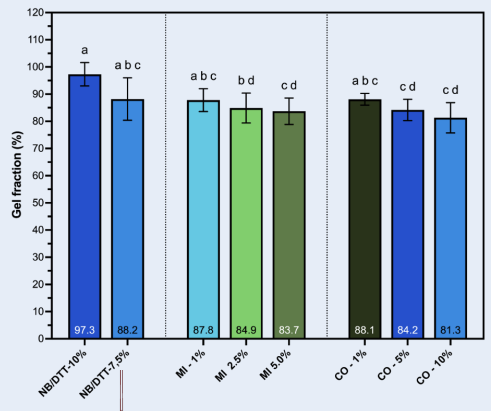




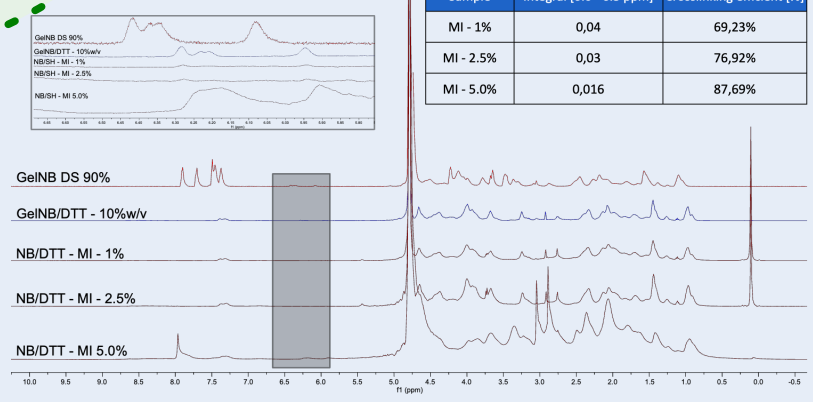
Sample	Integral [6.0 - 6.3 ppm]	Crosslinking efficient [%]
CO - 1%	0,05	61,54%
CO - 5%	0	100,00%
CO - 10%	0	100,00%



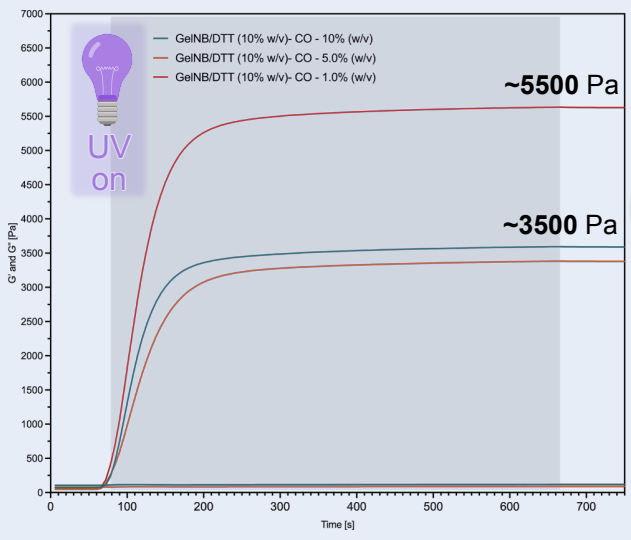
Gel Fraction



Sample	Integral [6.0 - 6.3 ppm]	Crosslinking efficient [%]
MI - 1%	0,04	69,23%
MI - 2.5%	0,03	76,92%
MI - 5.0%	0,016	87,69%



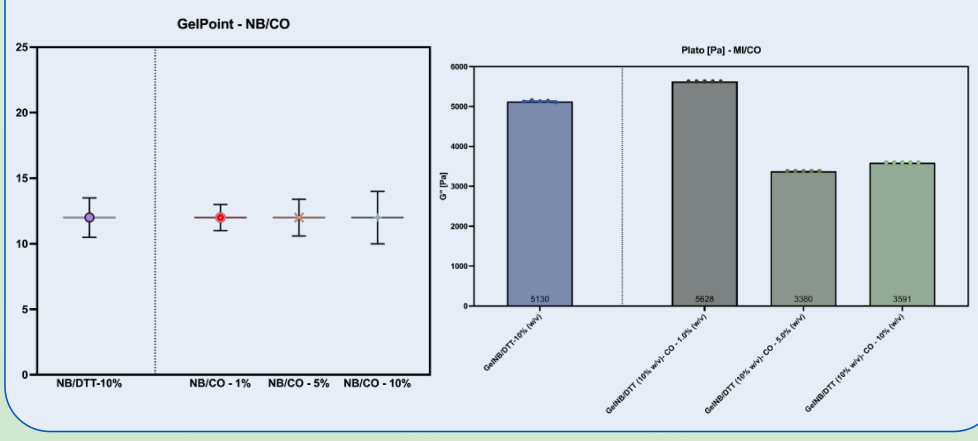
In situ photocrosslinking - Gel point (s) - Plato (Pa)

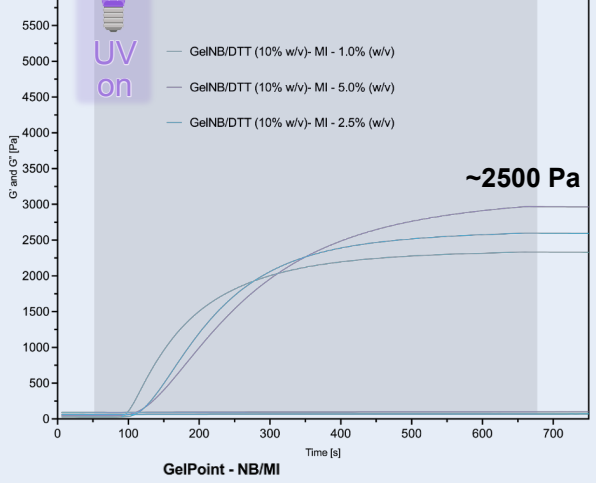




CO - 10%
Disk 5 mm

Plato (Pa):
GelNB/DTT: ~5.1 kPa
NB/CO - 1.0%:~5.6 kPa
NB/CO - 5.0%: ~3.3 kPa
NB/CO - 10%: ~3.5 kPa

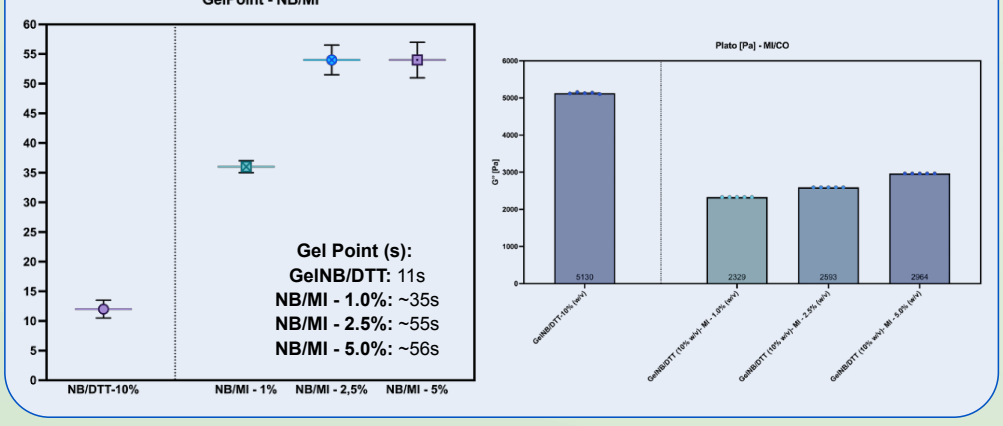






MI - 5%
Disk 5 mm

Plato (Pa):
GelNB/DTT: ~5 kPa
NB/MI - 1.0%:~2.3 kPa
NB/MI - 2.5%: ~2.5 kPa
NB/MI - 5.0%: ~2.9 kPa



Conclusion

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The incorporation of Maytenus ilicifolia preserved hydrogel formation while delaying gelation and reducing the plateau storage modulus compared with the control. Among extract-containing formulations, increasing the extract concentration increased the final modulus, demonstrating a concentration-dependent influence on network formation. These findings guide formulation optimization for future biological evaluation.

*Supplementary Information

Acknowledgments

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GHENT UNIVERSITY
FACULTY OF SCIENCES
PBM-UGent Polymer Chemistry & Biomaterials Group