



# Newsletter #2

November 2020



**PREMIUM**

Preserving bacteria with oligosaccharides  
and eco-friendly processes



## EDITO

The sanitary crisis that we have been experiencing for more than 10 months has led us to deal with unprecedented difficulties. However, we have continued to produce scientific results and to communicate on PREMIUM's work. I would like to thank PREMIUM partners for their engagement. I am particularly proud of the PhD students, who have managed to maintain their motivation and adapt to the new, more restrictive working conditions #ResearchMustGoOn!

Fernanda Fonseca, coordinator of PREMIUM project



Pictures 1 and 2: Post-confinement, PREMIUM scientific activity restarted slowly, above pictures of Maria, PhD student from Biosearch Life working on PREMIUM samples using iCINAC equipment; Pictures 3 and 4: Amélie, PhD student and Justine, Master's student from INRAE back to the labs in June 2020.

## Scientific activities

### [SECONDMENTS] Bacterial encapsulation at University of Coimbra



#### March | Florencia Ghibaudo, PhD student from CONICET, performed a 4-month secondment at University of Coimbra

Originally planned for a 2-month secondment to work on the development of a microencapsulation technique to preserve probiotics, Florencia had to perform an extra 2-month during worldwide lockdown. She took real advantage of this unavoidable extra-time to write an article on the work she performed for PREMIUM website (Bacterial encapsulation) and published Open Data for the project.

[Read the full article on Bacterial encapsulation](#)

### [REVIEW ARTICLE] Production of FOS and GOS

#### June 26<sup>th</sup> | Publication of a review article on the production of GOS and FOS using immobilized enzymes with partners CONICET and UMa

Ureta, M.M., Martins, G.N., Figueira, O., Pires, P.F., Castilho, P.C., Gomez-Zavaglia, A. "Recent advances in  $\beta$ -galactosidase and fructosyltransferase immobilization technology" (2020) Critical Reviews in Food Science and Nutrition (IF 7.9)

[Get access to the full article](#)

### [BOOK CHAPTER] Freeze-drying of lactic acid bacteria



#### September | Article on freeze-drying of lactic acid bacteria published in Cryopreservation and Freeze-Drying Protocols

This publication giving advices for freeze-drying bacteria involves Amélie Girardeau, PhD student from INRAE and researchers Fernanda Fonseca (INRAE) and Stéphanie Passot (AgroParisTech).

## Scientific activities

[CONFERENCE] New fructose-based cryoprotectants for mammalian cells



Fructose oligosaccharides as a novel cryoprotectant for mammalian cells

Peter Kilbride, Nelson Romano, Ayelen Hugo, Julie Meneghel, Jerome Delettre, G. John Morris, Andrea Gomez-Zavaglia, Stephanie Passot and Fernanda Fonseca

July 21<sup>st</sup>, 2020

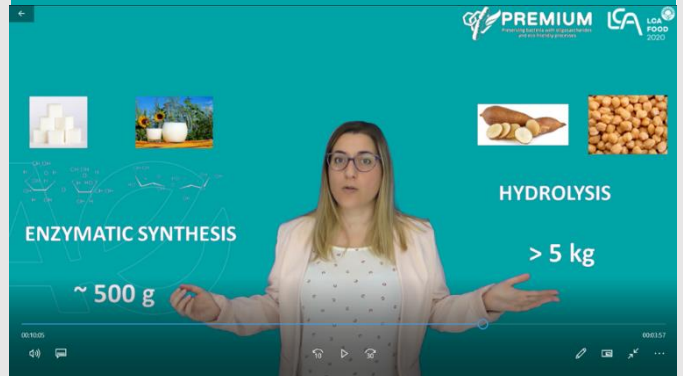


**July 21<sup>st</sup> | Asymptote ltd at international conference Cryo2020**

Peter Kilbride, researcher from Asymptote ltd - Cytiva, participated to the Annual Meeting of the Society for Cryobiology where he presented work in developing new fructose-based cryoprotectants for mammalian cells, as part of a collaboration with researchers from CONICET, AgroParisTech and INRAE.

[Find out more \(PREMIUM website\)](#)

[CONFERENCE] Environmental performance of new processes for the production of FOS and GOS



**October 13-16 | INRAE at international conference LCAFood2020**

Caroline Pénicaud, researcher at INRAE, participated to the virtual live LCAFood2020 conference to present the work performed with Camille Quantier (INRAE) and Esteban Gerbino (CONICET) during Esteban's secondment at INRAE in summer 2019: environmental performance of new processes for the production of fructo- and galacto-oligosaccharides (FOS and GOS).

[Find out more \(PREMIUM website\)](#)

## Outreach activities

[COMMUNICATION] University of Coimbra on Portuguese national radio



**June 30<sup>th</sup> | Pedro Simões, professor at the University of Coimbra, was invited to the Portuguese radio show *90 segundos de ciência* (90 seconds of science)**  
*(continued next column)*

Last June, Pedro S. was invited on national radio (Antena 1) to talk about the science developed in the project PREMIUM and the challenge of lactic acid bacteria preservation.

[Listen to the episode \(in Portuguese\)](#)

[PODCAST] Chill out: from cryotherapy to cryopreservation 

**September 3<sup>rd</sup> | 3 scientists from PREMIUM were interviewed for the Podcast Discovery Matters**

Julie Meneghel and Peter Kilbride (Asymptote) and Fernanda Fonseca (INRAE) discussed on the science of cryogenics for the episode 23 of Discovery Matters podcast – Chill out: from cryotherapy to cryopreservation, produced by Cytiva.

[Listen to the podcast](#)



## Outreach activities

[EXHIBITION] Biosearch at Vitafoods Virtual Expo 2020



**September 7-11 | Annual meeting for the global nutraceuticals community**  
Biosearch Life was one of the exhibitor of the Vitafoods Virtual Expo 2020 which brought together 13,662 attendees and 151 exhibiting companies.

[COMMUNICATION] Virtual participation to the French Science Fair @ Village des Sciences Paris-Saclay

### A retenir de notre aventure

- ✓ Des nuits et des weekends d'expériences
- ✓ Développement d'outils scientifiques adaptés à nos bactéries
- ✓ La publication de 4 articles scientifiques
- ✓ De nouvelles connaissances qui nous utilisons pour répondre à des enjeux industriels, notamment dans le projet européen PREMIUM
- ✓ Projet PREMIUM: Développement de nouveaux procédés de préservation des bactéries lactiques



PREMIUM project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 777657.  
<https://www6.inrae.fr/premium>

La Fête de la Science 2020

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**October 2-12 | Preview showing of the PREMIUM Video and online mini-conference by Stéphanie Passot, professor at AgroParisTech**

Double participation for INRAE and AgroParisTech to the French Science Fair this year with a preview showing of the PREMIUM Video (see next article) and an online mini-conference by Stéphanie Passot. The conference on "Lactic acid bacteria under the light of the Synchrotron SOLEIL" is still available at the website of the *Village des Science Paris-Saclay* along with a rich content of demonstrations, activities for the young public and mini-conferences.

[Watch the conference \(in French\)](#)

[VIDEO] Do you know what the recipe for yogurt is?



**PREMIUM Video**  
with English and Spanish subtitles  
Connaissez-vous la recette du yaourt?



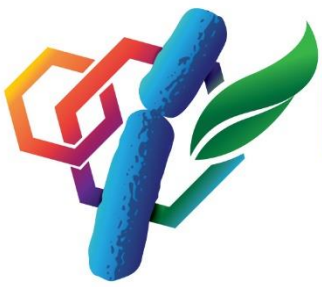
The content is covered under the Marie Skłodowska-Curie grant agreement No 777657.

INRAE AgroParisTech

**October 30<sup>th</sup> | PREMIUM Video on Eco-friendly preservation of bacteria | *une préservation éco-conçue des bactéries***  
PREMIUM released a video presenting the science behind PREMIUM with this video presenting the new eco-designed strategies for the preservation of lactic acid bacteria developed by the project. The video is available in French with English and Spanish subtitles.

[Watch the video \(PREMIUM website\)](#)





# PREMIUM

Preserving bacteria with oligosaccharides  
and eco-friendly processes

PREMIUM is a four-year staff exchange multidisciplinary program between 5 academic partners from three European countries (INRAE and AgroParisTech, France; University of Madeira and University of Coimbra, Portugal; ICFO, Spain), 1 academic partner from a non-European country (CONICET, Argentina) and 2 European industrial partners (Biosearch S.A., Spain and Asymptote Ltd., United Kingdom).



We hope you have enjoyed our newsletter, for any question, please use our contact form [here](#)

**Next issue in May 2021**

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[www6.inrae.fr/premium](http://www6.inrae.fr/premium)



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