

LORRAINE UNIVERSITY OF EXCELLENCE

The Lorraine University of Excellence brings together eight partners around a research and training program responding to the major economic and societal challenges of the 21st century. Confirmed to I-SITE status in 2021, the strength of its innovation strategy lies in the ability to mobilize its interdisciplinary, systemic, and entrepreneurial approach to issues such as: new materials, energy, ecological and digital transition, societal transition and health.

CONTACT

AUDREY DONNENFELD
+33 06 30 10 76 90

lue-presse-recherche@univ-lorraine.fr

Impact of biomolecules: Promising results for health, nutrition & cosmetics

The Impact "Biomolecules" project of the Lorraine University of Excellence (LUE) develops federative and targeted research based on 17 research laboratories, and as many companies. This open consortium aims to become a major player in the development of the bioeconomy with the production of new biomolecules for the following markets: agro-chemistry, biocontrol, agro-food, cosmetics, pharmaceuticals, and medicals.

The project focuses on major biological activities: anti-inflammatory, antiproliferative, and antioxidant. These choices were motivated by the positioning of the private partners relative to these markets and the skills, internationally recognized in these fields, of the laboratories of the consortium. This will make possible to validate the biological interest in the biomolecules, up to the preclinical and pre-marketing stages.

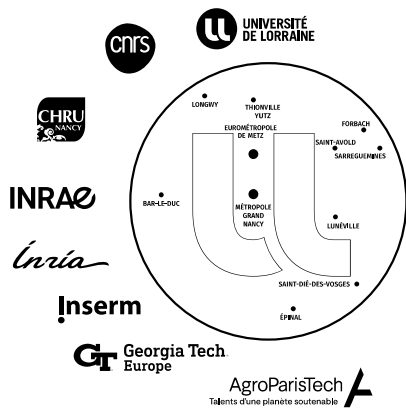
The scientific challenges for the partners of the Impact "Biomolecules" project include the study of interactions between living organisms (microorganisms and plants) responsible for the synthesis of new compounds, the design of molecules inspired by nature, and the control of their activity via their functionalization or their encapsulation/vectorization. After validation of their biological activity, they are incorporated into industrial and pharmaceutical products.

This is one of the great strengths of this project: the complementarity of the expertise available in the participating laboratories and companies makes it possible to cover all the stages of developing these biomolecules towards commercialization, from the initial discovery to the validation of their mechanism for action.

A solid partnership with KUYTECH (Japan)

As part of the partnership with KUYTECH, Kyushu Institute of Technology, Professor Stéphane Desobry presented, in the 10th international symposium on drug delivery systems on May 7th to 11th, the results of his research regarding the encapsulation of biomolecules for targeted and controlled release into the human body.

Results on the action of polar lipids on the brain have been presented to international pharmaceutical companies. He also presented LIBio's team results on the encapsulation of nutrients in



alginate and chitosan¹ capsules, a project funded by the Lorraine University of Excellence as part of the Impact Biomolecules project.

To find out more about the Impact “Biomolecules” project, see the replay of the May 16th, 2023 webinar: <https://www.univ-lorraine.fr/lue/espace-presse/>

¹ Alginates are salts of alginic acid, a biopolymer which is an essential component in the cell wall of brown algae. Chitosan is a polysaccharide derived from chitin, by deacetylation in the presence of a concentrated sodium hydroxide solution. Chitin, on the other hand, is a major constituent of the shells of crustaceans such as shrimps, lobsters, squids or crabs.