PROJECT FACTSHEET

Probiotics

Proof of concept of the impact of probiotics application in built environment.



Inspiration

A current paradigm of our society states that habitats must be as free of germs as possible and justify the intensive use of antimicrobial compounds or antibiotics. Unfortunately, this strategy has proven to result in antibiotic resistance development threatening human and animal health. Controlling the composition of ecosystems by favouring a given balance and maintaining a microbial ecology is more efficient than using of ecologically harmful methods (like aggressive disinfection). The applications of sanitisation method based on biological competition emerge by using safe bacteria colonising and stabilising the built environment.

Innovation

The objectives of the PROBIOTIC project consist in the identification of selective microorganism strains and the development of enriched probiotic cocktails for specific applications in the cleaning and human & pet care industry. The ultimate goal is to improve the build environment microbiota by replacing existing biofilm by a new microbial community, mainly composed of novel and safe microorganisms placed in the cleaning products.

These innovative products based on healthy microorganisms will have the ambition to be environmentally respectful, guaranteed to be efficient for end-consumers while providing a healthier lifestyle, help fighting pathogens and antibiotic resistance, as well as reducing the impact of toxic chemicals on living beings and surrounding environments.

In the framework of this project in collaboration with PBGL and the University of Luxembourg, LIST is in charge of microorganism isolation from different environments, their characterisation and selection as elements of a future probiotics cocktail. LIST researchers are also involved in the study of probiotics application impacts on the build environment microbial ecology as well as their advantages as powerful cleaning ingredients.

Impact

The PROBIOTIC projet will enable the collection and characterisation of microbial strains with probiotic activity. Knowledge about their specific functional interactions, their stability and their potential will allow a better understanding of the modes of action at the origin of bio-augmentation obtained by probiotics application in the environment.

As a result, a microbial biomass, with a better efficiency than current probiotic cocktails available on the market, will be developed and its culture will be scaled-up for industrial exploitations. Ultimately, PROBIOTIC will provide the main stakeholders with an innovative and new generation of probiotics-based cleaning products.

Partners

Luxembourg Centre for Systems Biomedicine - University of Luxembourg (LU), Probiotic Group - PBGL (LU)

Financial Support

Ministère de l'Economie (LU)

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