INTRODUCTION

Microbiome: hot topic for health and personal care market

Healthy status of people is often linked to the homeostasis of microbiome populating different body districts, meaning that specific microorganisms like bacteria, fungi and viruses colonize different sites of our body, by creating complex but balanced living communities.

Recent studies have highlighted the connection between the so-called microbiome dysbiosis (prevalence of pathogens on the skin compared to the healthy microbiota composition) and inflammatory or allergic diseases (for example atopic dermatitis or acne).

DEVELOPMENTS

Different approaches to interact with localized microbiomes

- Investigating the influence of probiotics on gut and other body areas
- Formulating probiotics into cosmetics
- Optimizing the stability of friendly bacteria in adverse conditions and/or into unsuitable environments
- Protecting skin microbiomes from pathogens and stressing factors

RESULTS

Innovative, performing and efficient ingredients for Health & Personal Care

With a strong basis on bio-fermentation, ROELM-HPC discovered how to protect probiotics and make them more suitable for food application by encapsulation technology. In order to preserve them during product preparation and administration. Later, the activity of probiotics has been investigated not only within the intestine, but also looking at their effect on skin inflammation, on cognitive function, in metabolic pathways, in the urogenital system, etc. As a step forward, ROELM-HPC moved to a different market, from nutraceuticals to cosmetics, designing specific ingredients for the skin. First by using deactivating probiotics thanks to their booster and immune-mimetic effect, then by developing ingredients aiming to reinforce the skin microbiome affected by external stresses like air pollution or salty/chlorinated water.

Every new development has been studied in vivo by looking at the metagenomics of microbiomes and skin improvement by specific parameters measurement. Volunteers belonging to both European and Asian ethnicities have been selected to globally enlarge ROELM-HPC expertise on this leading-edge topic.

Probiotics

Proprietary strains belonging to Lactobacilli, Bifidobacteria and other genera, in vitro & clinically tested for targeted applications and related consumers’ needs.

Cutting-edge technologies to explore innovative markets:
- Microencapsulation

Postbiotics

Powerful pure molecules showing peculiar protection activity of interpersonnal microbiota biodiversity. Promoters of a healthier skin, by regulating skin microbiota homeostasis. Skin moisturization, elasticity and the generalk-skin precocity are improved, thanks to microbiome equilibrium.

Prebiotics

Special ingredients that nourish and equilibrate gut and skin microbiomes, developed to accomplish different functions:
- Fills the empty spaces of body tissues, in order to avoid pathogens colonization
- Act as nutrients for resident microbiota that can grow and flourish better
- Modulation of inflammatory process and general benefit for the body

Bio-balancers

Development of molecules that can preserve the finished formula with a low impact on microbiota equilibrium.

CONCLUSIONS

Recent studies evidenced that the microbiome populations that live inside and on human body count up 40 trillions of bacterial cells.

Almost all these bacteria have a positive action on the host organism. Microorganisms are fundamental for the production of metabolites that are functional to our health. They give protection to the skin and inhibit pathogens proliferation both inside and outside the body. They play also an essential role in the modulation of our immunogenic response.

For all these reasons, it is of paramount importance the regulation of the body microbiomes through specific ingredients for the prevention and treatment of several diseases.