



The Micromarker Research and Development Project will evaluate the role of fungi as modulators of the microbiota in colorectal cancer

- **The role of bacteria present in the microbiota or intestinal flora in the development and progression of colorectal cancer**
- **Can modulating the composition of the microbiota also alter the inflammatory profile and affect tumour development?**
- **Micromarker will conclude with a clinical trial on cancer patients with the collaboration of a Spanish University Hospital**

Bora (Pontevedra, Spain), 13 th of May, 2019.- The collaborative research and development (R & D) Micromarker project, led by Hifas da Terra (HdT), will evaluate the relationship between modulation of the intestinal microbiota and the progression of colorectal cancer. In addition, the study will explore the effect of the use of fungi-derived prebiotics and anti-inflammatory compounds on the quality of life of cancer patients.

Research and Development Project outline

The framework for this project, which will be carried out over the next four years, concludes its final phase with the first clinical trial in Spain, with the collaboration of a public university hospital, on the effect of fungi-derived compounds on the large intestine and inflammatory markers in the progression of colorectal cancer. The research will gather both qualitative and quantitative results of the effects on the microbiota. Observations will also be made on the possible modifications to the microbiota from the complementary use of prebiotic products developed from fungi.

Dysbiosis and colorectal cancer

Although certain genetic factors contribute to the appearance of colorectal cancer, the microbiota or intestinal flora, seems to play an important role in its development and progression and in the quality of life of patients with this disease. Dysbiosis, or the imbalance of microorganisms present in the normal microbiota, is a common feature in patients with

cancer of the colon and rectum. Inflammation and the development of chronic inflammation are two of the most important mechanisms in relation to the disease.

“Based on previous evidence, this pioneering study in Spain will analyse the prebiotic and anti-inflammatory activity of medicinal mushrooms that have demonstrated these effects in previous international clinical studies and cell lines,” explains Catalina Fernández de Ana, biologist specialising in Mycotherapy and the general director of Hifas da Terra.

Micromarker phases

The Micromarker project includes studies similar to those of the trial in different models and the analysis of in vitro prebiotic and anti-inflammatory activity of products developed with fungi. Those products that present greater prebiotic activity will be combined with strains of fungal probiotics provided by consortium companies to obtain conclusive results of this synergistic relationship.

In the initial phases of the project, which will start in the coming months, new prebiotics will be developed from strains of medicinal fungi of Galician origin, which will provide valuable data on their molecular composition, specifically on the beta-glucans and proteins that they are made of. This initiative has the support of the Centre for the Development of Industrial Technology (CDTI), the financing mediator for the general administration of business research development and innovation projects (R + D + i) in Spain.

Role of the microbiota in the appearance and development of tumour growth

The microbiota or intestinal flora is the essential colony of bacteria (plus virus, fungi and yeasts), which lives in the human intestine maintaining a symbiotic relationship. Most of these bacteria are beneficial to the body because they participate in numerous physiological processes such as the metabolism of certain carbohydrates, the activation of the immune system, the regulation of the growth of intestinal cells and the synthesis of certain vitamins, such as vitamins K and B group vitamins.

The modulation of microbiota-derived lipopolysaccharides, which are involved in various inflammatory and metabolic pathologies, could be useful in a variety of patients, from those suffering from obesity to colorectal cancer.

“We have already studied the effect of fungi on the immune system, but this trial will allow us to assess their ability to modify the intestinal microbiota and how fungal extracts act positively against certain markers, such as inflammation.” adds Catalina Fernández de Ana.

Hifas da Terra

Hifas da Terra is a biotechnology Company based in Pontevedra (Galicia) and focused on research and innovation with a high degree of specialization in the development of nutraceuticals from medicinal mushrooms. The areas of research and innovation in applied mycology are human health, animal health and environment rehabilitation.

Pioneers in the development of innovative nutritional supplements and with presence in France, Portugal, Italy, UK, Ireland, Germany and China. They have been awarded 13 distinctions for their innovation, business excellence and commitment to the revitalization of rural areas and conservation of the environment. They are considered to have one of the largest private fungal stocks in Europe and develop new cultivation techniques optimized to achieve homogenous production with high concentration of active ingredients.

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