FIBICO – The use of MUC13 and TFF1 as new targets for developing therapeutic solutions in Pseudomyxoma Peritonei.

Abstract

A research group from the Andalusian Public Health System (SSPA) has developed an invention within the field of biotechnology and molecular diagnostics consisting of a protocol to isolate proteins from the malignant Pseudomyxoma peritonei (PMP) tumor for use in the development of new therapeutic targets.

Offer description

PMP is a rare malignat tumor whose molecular mechanisms are uknown. It´s characterized by the progressive accumulation of mucin and secreti ng tumour cells within the abdomen and pelvis. Cytoreductive surgery combined with Hyperthermic Intraperitoneal Chemotherapy is the only therapeutic option. In addition, recurrence with a fatal end is common. The lack of information about molecular mechanisms is mainly due to the physicochemical characteristics of mucin, which has been designed to protect the epithelial cells.

We describe here the first protocol to break this barrier and isolate proteins from soft and hard PMP mucins. This approach is based on glycoproteins, inmunoglobins and albumins depletion by affinityliquid chromatography, and it makes the mucin able for free-label mass spectrometry.

Our protocol releases a mix of total proteins like non-mucinous tissue. It´s allowed us to get the first protein profile in mucinous tumours, where Protein-Protein interactions networks and pathway enrichment analyses revealed MUC13 and TFF1 as potential therapeutic targets.

Once MUC13 and TFF1 have been validated as therapeutic targets, the following industrial applications are proposed:

1.- Development of immunotherapies that use MUC13 as a specific target of tumor cells that remain after surgery.

2.- Development of intraperitoneal TFF1 synthesis inhibitors to prevent the production of solid mucin and allow the suction of liquid mucin in patients with recurrence

Offer advantages

-The discovery of new therapeutic targets for this type of tumor will provide the first specific treatment and will improve the life expectancy of patients

Industrial/intellectual protection

This technology is protected by European patent.

Objective of the collaboration

Search a collaboration that leads to the commercial explotation of the invention presented. The terms and conditions of the license agreement can be openly discussed if the technology presented is of interest.

Clasification

Activity/Type: Biotechnology and molecular diagnostics.

Patology: Pseudomyxoma peritonei.

Representative Institution and Inventor

The main investigator behind the innovation is Antonio Romero Ruiz and Álvaro Arjona Sánchez, researchers of the GE09 Research group in peritoneal and retroperitoneal oncological surgery.

The development of the project has been possible thanks to the Andalusian Health Service and the University of Córdoba

Contact of Institution

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