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III ENCONTRO DE  
BIOTECNOLOGIA  
MEDICINAL

I IBERIAN CONGRESS ON  
MEDICINAL  
BIOTECHNOLOGY

BOOK OF ABSTRACTS



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## Influence of KRAS activation in the colorectal cancer immunosurveillance escape

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**Introduction:** The immune system as a host defense system watches the cell growth and division, eliminating cells with antigens different from those present in healthy cells. However, some transformed cells have the capacity, through various mechanisms, to escape the immune system. Genomic instability and some mutations are pointed as possible mechanisms supporting the immunosurveillance escape, as is the case of KRAS mutation. This oncogenic mutation is present in about 30% of cases of colorectal cancer and confers to the tumor a greater potential for malignancy. It is known that KRAS mutant cancer cells regulate the recruitment, activation, and differentiation of immune cells, promoting tumor evolution by ensuring leakage to the immune system and increasing the proliferative potential. Few evidence highlights an association between a KRAS mutation and myeloid cells, mainly macrophages and neutrophils infiltration. However, the mechanism which determines this interaction remains unclear. Due to the growing knowledge of different immunosuppressive molecules, it became interesting to investigate if there is an alteration in these molecules related to the KRAS activation.

**Materials and Methods:** In our work, a series of these molecules were analyzed by flow cytometry in a panel of KRAS mutant colorectal cancer cells in which KRAS was silenced by small interfering RNA.

**Results and Conclusions:** Preliminary results suggest that the silencing of this oncogene lead to the alteration of some molecules involved in the crosstalk with the immune system cells, such as macrophages. In conclusion, the KRAS activation seems to be capable to regulate the expression of surface markers which can regulate and suppress the immune response of the tumor infiltrated immune cells.

**KeyWords:** colorectal cancer, KRAS mutation, immune surveillance, macrophages.