

BIOCHEMICAL REGULATION OF IMMUNE SENESENCE

Immunosenescence is a process leading to the progressive decline of the immune system activities, (including the impairment of T cells functions) which is associated with increased occurrence of infections and tumors and decreased response to vaccination. Experimental evidence indicates strong association between the decline of cellular immune responses and modification of T cell metabolism in elderly. Accordingly, the main goals of this project are the functional and molecular characterization of the immunosenescence process and the identification of molecules capable of improving naïve and memory T cell responses. The expected results contribute to the understanding of the mechanisms involved in T cell immunosenescence and to the identification of novel therapeutic/preventive strategies to improve and increase the immune responses against infections, tumors and vaccines in elderly.

GOALS

- Characterization of functional activities of T cells in elderly
- Characterization of molecular defects of T cells in elderly
- Characterization of metabolism of fatty acids and sugars of T cells in elderly
- Identification of novel molecules capable of increasing T cell immune responses in elderly

INSTRUMENTS AND METHODS

Biochemical, immunological and microbiological methods including purification and cultivation of peripheral blood human cells, cytofluorimetry, analysis of cytokines production/release, analysis of fatty acid and sugar metabolism, analysis of RNA and protein expression. Instruments used in this study are standard instruments for cellular and molecular biology and immunology.

SUBJECTS

Biochemistry, molecular biology, immunology, microbiology.

WORKING GROUP

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COLLABORATIONS

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