IMMUNOMODULATION BY ENZYME IL4I1

Development of a specific inhibitor of the enzyme IL4I1 to ameliorate the anti-tumor immune response, by limiting IL4I1 immunosuppression.

ERGANEO
L'AVENIR EST FAIT D'AUDACE

PRESENTATION

IL4I1 is an immunosuppressive enzyme highly expressed in all cancers by infiltrating macrophages and in some cases, such as B lymphomas and mesotheliomas, by tumor cells. Its expression in the tumor bed favors immune escape. This process might result in a defective response to immunotherapy in cancers, in particular in the cases, which have failed or become resistant to anti-checkpoint treatments. We propose specific inhibitors of enzyme IL4I1 to enhance the anti-tumor immune response.

APPLICATIONS

- All types of cancers presenting a macrophage infiltrate
- Melanoma
- Lymphoma
- Mesothelioma

> Cancer - Anti-tumor - Immunomodulation - Immunosuppressive enzyme - IL4I1 - Immunotherapy

COMPETITIVE ADVANTAGES

- Efficient inhibitors of IL4I1
- Non toxic

DEVELOPMENT PHASE

In vitro efficacy & toxicity assays
In vivo Pharmacocinetic assay
TRL 2

PUBLICATIONS

- Identification of inhibitors of the immunosuppressive enzyme IL4I1. 2019 Bioorganic Chemistry 94:103463DOI: 10.1016/j.bioorg.2019.103463
- The IL4I1 Enzyme: A New Player in the Immunosuppressive Tumor Microenvironment. Valérie Molinier-Frenkel Armelle Prévost-Blondel and Flavia Castellano Cells 2019, 8, 757; doi:10.3390/cells8070757
- An Overview of L-Amino Acid Oxidase Functions from Bacteria to Mammals: Focus on the Immunoregulatory Phenylalanine Oxidase IL4I1. 2017. FEBS Lett. 10.1002/1873-3468.12784. Valérie Molinier-Frenkel and Flavia Castellano
- The immunosuppressive enzyme IL4I1 promotes FoxP3+ regulatory T lymphocyte differentiation 2015, Eur J Immunol. Céline Cousin, Aude Aubatin, Sabine Le Gouvello, Lionel Apetoh, Flavia Castellano and Valérie Molinier-Frenkel

INTELLECTUAL PROPERTY

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