
PRESS RELEASE

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Autoimmune and inflammatory diseases associated with primary immune deficiencies: 11 major healthcare players in France commit to accelerating the development of precision medicine

The Imagine Institute, Sanofi, Ariana Pharmaceuticals, Assistance Publique - Hôpitaux de Paris AP-HP, INRAE (Unit MetaGenoPolis), CEA, Institut Pasteur, Institut Curie, University of Paris, Sorbonne University and Inserm announce the signature of a consortium agreement within the framework of the Programme d'Investissements d'Avenir. This project aims to develop a precision medicine for patients with autoimmune and inflammatory diseases associated with primary immune deficiencies.

Coordinated by *Imagine* Institute and funded with 9,9 million of euros over 5 years, ATRACTion program is one of the 15 winners of the fourth call for projects “*Recherche Hospitalo-Universitaire en santé*” of *Investissement d'Avenir* program launched by the French government and managed by ANR. It is supported by a consortium of 11 academics and industrial partners who joined forces to develop disruptive and transformative approaches in the fields of diagnosis, prognosis and therapies to fight pathologies related to the mechanisms of autoimmunity and inflammation in primary immune deficiencies.

Primary immune deficiencies group more than 420 rare monogenic diseases affecting the development, the function or the regulation of the immune response. The symptoms, extremely varied and of different degrees of severity can lead to significant diagnostic and therapeutic wandering. Patients suffering from these pathologies generally require extensive treatments throughout their lives, which can have important side effects.

Under the coordination of Dr. Frédéric Rieux-Laucat, Inserm Research Director at *Imagine* Institute, ATRACTion takes advantage of a highly favorable multidisciplinary and translational environment that brings together all the partners implicated in the project. It gathers academic experts from different fields (immunology, microbiology, data science, artificial intelligence, multi-omic analysis), medical doctors and industrial partners. Participate in this ambitious project multiple partners: Sanofi, Ariana Pharmaceuticals, Assistance Publique – Hôpitaux de Paris AP-HP, INRAE (Unit MetaGenoPolis), CEA, Institut Pasteur, Curie Institute, Université de Paris, Sorbonne Université and Inserm.

« **The strength and originality of this project relies on single-cell analysis of human biological samples that will lead to the emergence of new and uncharacterized biological interaction networks, and on the analysis in parallel of the microbiota composition and microbial metabolites in order to understand the role of intestinal bacteria in these pathologies** », announces Dr. Frédéric Rieux-Laucat. ATRACTion opens the door to a more personalized medicine and to new diagnostic and therapeutic

solutions, based on new molecules or on the repositioning of molecules already used for other pathologies.

ATRACTION aims to change the care of patients with primary immune deficiencies presenting symptoms related to autoimmunity and inflammation: **"the fundamental goals of the project are to propose an application to support healthcare professionals in their decisions concerning diseases' diagnostics or therapeutics, and to develop new therapeutic strategies"**.

This program demonstrates public and private sector interest in deciphering autoimmune/inflammatory diseases through **multi-omic investigations coupled with artificial intelligence-based analysis**. The quality of the expertise of the partners involved in the creation of a customized program is what makes ATRACtion unique in its field.

About Imagine Institute: *Imagine* is the first European center for research, care and teaching on genetic diseases. With the mission of understanding and curing them, the Institute brings together 1000 of the best doctors, researchers and healthcare personnel in an architecture that creates synergies. It is this unprecedented continuum of expertise, combined with proximity to patients, that allows Imagine to make discoveries for the patients. The approximately 9,000 genetic diseases that have been identified affect 35 million patients in Europe, and nearly 3 million in France, where 30,000 new cases are diagnosed each year. Nearly 60% of the children received in consultation leave without a genetic diagnosis and 90% of genetic diseases have no cure. Faced with this major public health issue, the challenge is twofold: to diagnose and cure. www.institutimagine.org

About the other partners

Sanofi: www.sanofi.com

Ariana Pharma: www.arianapharma.com/

AP-HP: www.aphp.fr

INRAE (Unit MetaGenoPolis): <http://mgps.eu/>

CEA : www.cea.fr

Institut Pasteur and the Institut Pasteur International Network: www.pasteur.fr

Institut Curie: www.curie.fr

University of Paris: [Visiter u-paris.fr](http://visiter.u-paris.fr).

Sorbonne University: www.sorbonne-universite.fr

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