

IMABGEN Project, an innovative platform in immunotherapies

Lyon, December 16, 2021

The **IMABGEN Platform project**, an innovative service for the generation of therapeutic antibodies carried by **BIOTEM**, **CALIXAR** and the **CNRS / Université Claude Bernard Lyon 1**, is one of the laureates of the “**R&D Booster**” 2021 program driven by the Region Auvergne-Rhône-Alpes.

Immunotherapy has become a major approach in the fight against cancer. One of its modes of action – a discovery awarded the 2018 Nobel Prize – uses **antibodies** that bind very specifically to cellular antigens, thereby modulating or neutralizing their function. The prolongation of the success of this therapeutic route, by acting on new targets, is however closely linked to the ability to isolate new high-performance antibodies, as well as to the preservation of the structure of the antigens which condition their interaction.

The **IMABGEN** (Innovative Monoclonal AntiBody/antiGEN) platform aims at producing such antibodies with unparalleled completeness and efficiency by developing two axes. The first will provide ‘**native**’ **membrane antigens**, which are both the most numerous and the most fragile targets, thanks to **CALIXAR**’s proprietary technologies and the expertise of two teams from the Molecular Microbiology and Structural Biochemistry Unit* (CNRS/*Université Claude Bernard Lyon 1*). Six antigens will thus be isolated, including **receptors, transporters and synthases**. The second axis, carried out by **BIOTEM**, will generate new **synthetic libraries** with very broad spectrum, associated with a **novel method of antibody selection**.

The **Region Auvergne-Rhône-Alpes**, through its **R&D Booster program**, will enable the **partners of the IMABGEN platform** to complete its **proof of concept** with the objective from 2024 to offer a **high-performance and innovative service for the generation of antibodies for therapeutic purposes**, diagnostics and analysis, against antigens targeted by pharmaceutical and biotechnology companies and/or academic research centers. This service will create around 30 **direct jobs** by the end of 2025 and up to a few hundred more by 2035 thanks to the strong anticipated growth in the sector.

About aid from the Region Auvergne-Rhône-Alpes

The Auvergne-Rhône-Alpes Region's R&D Booster program finances collaborative research and development (R&D) projects aimed at helping the creation of new products, processes or services with a short or medium-term marketing objective (18 to 24 months). This regional support takes the form of grants and/or, for private entities, of Zero Rate Innovation Loans (PTZI) from the collaborative innovation component of the Auvergne-Rhône-Alpes Regional Innovation Fund.

For the IMABGEN project, a regional support of € 371,114 was granted to the consortium as a grant, and € 166,475 in PTZI.

www.auvergnerhonealpes.fr/aide; www.bpifrance.fr

About BIOTEM (Apprieu – France)

Expert in immunotechnologies since 1980, BIOTEM is a contractual research organization (CRO) which provides high added value services for the development of monoclonal antibodies and tailor-made immunoassays (ELISA and LFIA). Its quality management system complies with ISO 9001: 2015/ISO 13485: 2016 standards, the company is the privileged partner of nearly five hundred private or academic laboratories, for their fundamental research projects, diagnostic development and for the generation of therapeutic tools.

www.biotem-antibody.com; info@biotem.fr

About CALIXAR (Lyon – France)

Created in 2011, CALIXAR develops proprietary approaches to isolate whole and native membrane therapeutic targets with the best level of quality. CALIXAR is developing a portfolio of medically relevant targets and using its technology platform for companies needing to identify, extract and purify membrane proteins (RCPG, ion channels, receptors, transporters and viral proteins). CALIXAR's approach makes it possible to work with reliable and very high-quality targets and antigens, compatible with all applications and in all fields (human, animal, plant).

www.calixar.com; contact@calixar.com

About laboratoire Microbiologie Moléculaire et Biochimie Structurale (Lyon – France)

The teams associated with the IMABGEN project are housed at the Institute of Biology and Chemistry of Proteins, within the Joint Research Unit entitled Molecular Microbiology and Structural Biochemistry (MMSB); The MMSB is under the co-supervision of the CNRS, a national multidisciplinary research organization and *Université* Claude Bernard Lyon 1.

The "Resistance to Drugs and Membrane Proteins" team focuses on the expression, extraction, stabilization, purification, functional characterization and structural determination of membrane proteins involved in the mechanisms of resistance to anticancer, antifungal and antibiotic drugs. It has developed some of the molecules used in the proprietary approaches of CALIXAR.

The "Bacterial ATPase/ GTPase: Antibiotic Resistance and New Enzymes" team is an expert in the overexpression, purification and functional and molecular characterization of bacterial transporters involved in resistance to antibiotics or antimicrobial peptides.

pierre.falson@ibcp.fr; <https://mmsb.cnrs.fr/en/team/drug-resistance-and-membrane-proteins-drmp/>
jean-michel.jault@ibcp.fr; <https://mmsb.cnrs.fr/en/team/bacterial-nucleotide-binding-proteins-resistance-to-antibiotics-and-new-enzymes/>

* : The MMSB (Molecular Microbiology and Structural Biochemistry) laboratory is affiliated with both the CNRS and the *Université* Claude Bernard Lyon 1, which is a member of the C.O.M.U.E (Community of universities and establishments) *Université* de Lyon.

** : The call for projects within the R&D Booster program for 2022 is open.
Application deadline is Feb. 2nd, 2022.

Press Contacts:

- For CNRS: Sébastien Buthion, CNRS Rhône Auvergne Communication
dr07.communication@cnrs.fr
+33 688 618 896
- For BIOTEM: Jonathan Mayali, BIOTEM Communication
info@biotem.fr
+33 476 939 735
- For CALIXAR: Claire Troillard, CALIXAR Communication
contact@calixar.com
+33 481 076 460

Research Contacts:

- Pierre Falson, Research Director CNRS
pierre.falson@ibcp.fr
- Jean-Michel Jault, Research Director CNRS
jean-michel.jault@ibcp.fr

