

MABImprove

A French “Laboratoire d’excellence” (LabEx) dedicated to therapeutic antibodies

André Pèlerin^{1,*}, Arnaud Daguet² and Hervé Watier^{2,3,*}

¹IRCM; Institut de Recherche en Cancérologie de Montpellier; INSERM, U896; Université Montpellier; Institut régional du Cancer Montpellier; Montpellier, France; ²Université François Rabelais de Tours; CNRS, UMR 7292; Tours, France; ³CHRU de Tours; Service d’immunologie; Tours, France

In the context of the “Grand Loan,”¹ also known as the “Investment for the Future” program, the French government launched a call in 2010 to identify already renowned laboratories proposing a unifying and ambitious project covering basic science, training and technological transfer. The idea was to provide substantial financial support over an unusually long period (10 y), which would allow them the opportunity to capitalize on their initial research potential, with an expected economic return on investment. To sum up the spirit of this call, the French government named it “Laboratoires d’excellence” (LabEx). Although the call was initially focused on local initiatives, e.g., research groups on the same university campus in major cities, it was also open to projects including several universities.

Dedicated to therapeutic antibodies, MABImprove is a bipolar LabEx that gathers 14 academic research teams from Tours and Montpellier.² It is based on a partnership between the Universities of Tours and Montpellier, associated with the Inserm (Institut National de la Santé et de la Recherche Médicale), the CNRS (Centre National de la Recherche Scientifique), the INRA (Institut National de la Recherche Agronomique), the University Hospital of Tours and the Comprehensive Cancer Hospital of Montpellier (ICM). It is also based on a national network headed by one of us in Tours (H. Watier), and it gathers academic teams and pharmaceutical and biotechnology companies involved in therapeutic antibody research,³ the latter being directly interested in the benefits of the MABImprove project. Academic teams from Tours have a nice complementarity with those from Montpellier, particularly the “Institut de Recherche en Cancérologie de Montpellier” (IRCM)⁴ and the IMGT’s lab and its antibody nomenclature.⁵

The MABImprove LabEx was selected in March 2011 by an international jury at the first round of the LabEx call and was officially inaugurated in October 2011. MABImprove’s project on the current clinical use of therapeutic antibodies is based on the idea that their use can still be improved and that the clinical “model” still holds many secrets to be disclosed (“from bedside to bench” approach) and exploited to aid development of new and improved antibodies (“from bench to bedside” approach is classically used in pharmaceutical industry). Thus, MABImprove’s

motto is “improved antibodies with an improved development and an improved use.” MABImprove is organized in five work-packages (WP) logically starting from clinical pharmacology (WP1), then experimental pharmacokinetics (WP2) and pharmacodynamics (WP3) to new targets evaluation (WP4) and innovative technologies (WP5). A supplementary WP is dedicated to training, from technicians to PhD and beyond.

Meeting Organization

In addition to its scientific and training programs, MABImprove organizes scientific meetings devoted to therapeutic antibodies. Consistent with its project based on the clinical use of therapeutic antibodies, these meetings address questions related to clinically relevant issues. Past meetings were devoted to “Therapeutic antibodies and anaphylaxis” (Tours, June 2011),⁶ “Therapeutic antibodies and infectious diseases” (Tours, November 2012)⁷ and “Therapeutic antibodies and cancer: tools and models to understand and improve their efficacy” (Montpellier, November 2013).

Other meetings called “Industrial Workshops” are primarily intended to provide scientists involved in research on therapeutic antibodies with a comprehensive view about topics of interest for the pharmaceutical industry. The 2013 edition of these “LabEx MABImprove industrial workshops,” held May 28 at the Vinci Center of Tours, was dedicated to antibody biosimilars. A report of this stimulating meeting, which gathered many people with divergent scientific backgrounds from the academic or industrial world, appears in this issue of *mAbs*.⁸

Dedicated to the question of the antibody dose, the 2014 edition will be held in Montpellier on July 3rd, 2014. The questions addressed will include: How to choose, during Phase 1, the dose of a drug that is not directly cytotoxic?; How to define the “optimal” dose, the more effective one?; What are the most effective techniques for antibody monitoring and modeling calculation methods in humans?; How to adapt a dose optimized for a monotherapy when several antibodies are associated?; Can animal models help us to answer these questions, and, if so, which

*Correspondence to: André Pèlerin; Email: andre.pelegrin@inserm.fr; Hervé Watier; Email: herve.watier@univ-tours.fr
Submitted: 05/15/14; Accepted: 05/15/14; Published Online: 05/16/2014
<http://dx.doi.org/10.4161/mabs.29262>

ones (primates, GM models, etc.); and What is the impact of a change in the dose on antibody immunogenicity, efficacy and cost of treatment? A panel of experts from different fields (academia, industry, regulatory agencies) will be assembled to deal with all aspects of this subject and to propose a program, which is now available.⁹

Opportunities to Welcome New Research Groups

To structure and encourage research on therapeutic antibodies, MAbImprove currently supports on-going projects to speed them up and favors the initiation of new projects. To further strengthen this research domain (one of its main objectives), MAbImprove will support the creation of two new research teams, one in Tours and one in Montpellier. The initial support package provided by MAbImprove includes a 3 y group leader salary (for laureate without permanent position), a 3 y post-doctoral fellow salary, a PhD student and starting grant (post-doctoral fellow and PhD student will be selected by the laureate group leader). Candidates without permanent position must meet criteria to compete for national and international research funding, and for French institutional positions (Inserm, CNRS, university). Both junior and senior group leader proposals will be considered.

References

1. Enserink M. France. Sarkozy's 'Grand Loan' bets that research will pay off. *Science* 2009; 326:1613; PMID:20019265; <http://dx.doi.org/10.1126/science.326.5960.1613-a>
2. Laboratoire d'excellence MAbImprove. <http://mabimprove.univ-tours.fr/?lang=en>
3. Watiez D, Watier H. [Therapeutic monoclonal antibodies in the French community: let's get organized]. *Med Sci (Paris)* 2009; 25:1189-92; <http://www.gdraccith.fr/index.php?page=en>; PMID:20035704; <http://dx.doi.org/10.1051/medsci/200925121189>.
4. Institut de Recherche en Cancérologie de Montpellier <http://www.ircm.fr/index.php?locale=en>
5. Lefranc MP. Antibody nomenclature: from IMGT-ONTOLOGY to INN definition. *MABs* 2011; 3:1-2; <http://www.imgt.org/>; PMID:21099347; <http://dx.doi.org/10.4161/mabs.3.1.14151>.
6. Daguët A, Watier H. 2nd Charles Richet et Jules Héricourt workshop: therapeutic antibodies and anaphylaxis; May 31-June 1, 2011, Tours, France. *MABs* 2011; 3:417-21; PMID:21857165; <http://dx.doi.org/10.4161/mabs.3.5.17485>
7. Desoubreaux G, Daguët A, Watier H. Therapeutic antibodies and infectious diseases, Tours, France, November 20-22, 2012. *MABs* 2013; 5:626-32; <http://taid.fr/?lang=en>; PMID:23883703; <http://dx.doi.org/10.4161/mabs.25300>.
8. Guillon-Munos A, Daguët A, Watier H. Antibody biosimilars; Fears or opportunities? First LabEx MAbImprove industrial workshop, May 28, 2013; Tours, France. *MABs* 2014; 6:805-9; PMID:24714167; <http://dx.doi.org/10.4161/mabs.28831>.
9. Second LabEx MAbImprove industrial workshop: MabDosing. <http://www.mabdosing.fr/en/index.html>
10. Institut du Cancer de Montpellier. <http://www.icm.unicancer.fr/fr>
11. SIRIC Montpellier Cancer <http://montpellier-cancer.com/en/>

The 2014 call is devoted to therapeutic antibodies against cancer, in partnership with the IRCM,⁴ a research institute focused on cancer. Based on the federative research topic "Molecular Targets and Cancer Therapeutics," IRCM is presently composed of 12 research teams organized in two main programs: (1) therapeutic antibodies to target cancer: innovation, design and biological response; (2) phenotypic, genetic, epigenetic and signaling plasticity of solid tumors: from discovery to personalized medicine. IRCM is located on the campus of the Comprehensive Cancer Hospital of Montpellier (ICM)¹⁰ renowned for its clinical excellence in preventing, diagnosing and treating solid tumors. IRCM is funded by Inserm, ICM, and the University Montpellier 1, which includes the Faculty of Medicine. It is part of the strong and rapidly growing Montpellier research and medical communities that provide an exciting, supportive and collaborative environment recently labeled as one of the 8 French Integrated Research Sites in Oncology (SIRIC).¹¹

mAbs' readers are welcome to apply to this call! Please send by email your CV, publication list and a short description (2 pages) of research accomplishments and future plans to herve.watier@univ-tours.fr, andre.pelegrin@inserm.fr and claudesardet@inserm.fr by October 15th, 2014. Please also arrange for two letters of reference to be sent separately by email before the deadline. Prof. Hervé Watier and Dr. André Pèlerin, who manage this call, will be pleased to answer to any questions.