



# ANNUAL REPORT

2016

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## INTRODUCTION

As an introduction to this Annual Report, 4 aspects that marked 2016 are worth being highlighted:



STRATEGIC PLAN



52 ARTICLES  
PUBLISHED



FIRST RETURN  
ON INVESTMENT



3 "BRIDGE FUND"  
PROJECTS

- Strategic analysis

WELBIO adopted new articles of association in 2016, particularly in order to expand the Board of Directors to 3 university representatives of the Wallonia-Brussels Federation, as well as to a 4<sup>th</sup> representative from the industrial sector. At the same time, an analysis was conducted on WELBIO's mission, its future and position within the Walloon biotech landscape. Thus, the new Board of Directors adopted its 2020 Strategic Plan with the ambition to build an even more effective WELBIO.

- Renewal of the portfolio of projects

All the 14 projects selected at the end of the 2015 call-for-projects reached full speed in 2016. Apart from the research work, commercialisation committees were set up, allowing us to explore the commercialisation potential of these projects. With 52 articles published in 2016, of which 21 in journals with the highest impact factor, scientific excellence remains at a high level. WELBIO has also prepared the launch of its 4<sup>th</sup> call for projects in 2017.

- First return on investment

So far, WELBIO'S funding has come exclusively from a subsidy provided by the Walloon Government. Ultimately, the "commercialisation" of research results must generate additional revenues that will increase our financial capabilities and allow us to continue funding the research. An important step in this direction was taken in 2016: the cooperation between arGEN-X company and the laboratory of Prof. P. Coulie (UCL – WELBIO 2011-2015) and Prof. S. Lucas, registered a very positive evolution. An agreement was signed between arGEN-X and AbbVie, leading to the payment of \$40,000,000 by AbbVie to arGEN-X, part of which will be allocated to WELBIO, through

UCL, in 2017. Thus, WELBIO is about to obtain its first return on investment, demonstrating the relevance of its operational model.

- 3 bridge projects

WELBIO projects are, by definition, fundamental research projects. After 4 years, they do not necessarily lead to actual commercialisation. Sometimes a "little push" is needed for a pathway to materialize, for example to consolidate a patent application or to achieve a proof of concept. 3 Bridge Fund projects were initiated in 2016, being directly supported by WELBIO asbl, in order to advance towards the commercialisation of WELBIO projects initiated in 2011 and closed in 2015.

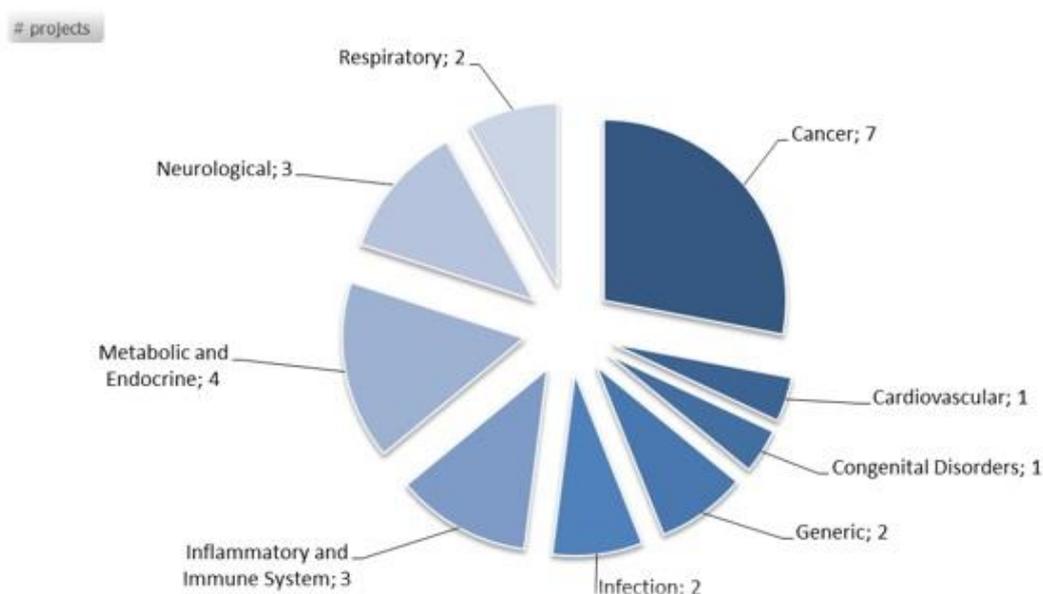
At the time of writing this report, the 2017 FRFS-WELBIO call for projects has just closed with the selection of a new batch of projects. While the solid skills of life science investigators from French-speaking universities in the country are demonstrated once again, the weakness of WELBIO'S funding remains the major challenge to be faced. Fundamental research, particularly in our sector, is a long-term initiative that absolutely needs continuity and long-term stability.

## SCIENTIFIC RESEARCH

### 1. PORTFOLIO OF PROJECTS

Unfortunately, the annual budget of WELBIO is still too low compared to the excellent research potential in the life science sector of French-speaking universities in the country.

In 2016, 22 FRFS-WELBIO PROJECTS were underway and 3 WELBIO BRIDGE FUND PROJECTS were initiated (see the chapter on commercialisation). Research sectors stem from the best proposals. No research sector is predefined but, overall, the projects are oriented towards human health, upstream of the BioWin competitive cluster. The graphic below shows the distribution of 25 projects according to the HRCS (Health Research Classification System) classification.



"Advanced grants" for 2013-2017:

- **Michel Georges:** EUR 350,000/year  
University of Liege  
*Integrating genetics and functional genomics to identify causative genes and variants controlling inherited predisposition to inflammatory bowel disease*
- **André Goffinet** – EUR 250,000/year  
Catholic University of Louvain  
*Mechanisms of brain wiring*
- **Marc Parmentier:** EUR 350,000/year  
Free University of Brussels  
*Role of leukocyte chemotactic factors in tumour progression*

## "Starting grants" for 2013–2017

- **Fabrice Bureau:** EUR 200,000/year  
University of Liège  
*Ontogeny and molecular differentiation pathways of lung interstitial macrophages*
- **Patrice D. Cani** – EUR 200,000/year  
Catholic University of Louvain  
*Study of the dialogue that exists between intestinal bacteria and host: impact on the development of obesity and type 2 diabetes*
- **Stanislas Goriely:** EUR 200,000/year  
Free University of Brussels  
*Transcriptional control of memory CD8 T cell differentiations*
- **Cédric Govaerts:** EUR 200,000/year  
Free University of Brussels  
*Structural characterisation of CFTR using nanobodies*
- **Charles Pilette:** EUR 200,000/year  
Catholic University of Louvain  
*Impaired lung mucosal immunity in severe asthma*

## "Advanced grants" for 2015–2017 (renewable in 2017):

- **Cédric Blanpain:** EUR 297,000/year  
Free University of Brussels  
*Mechanisms controlling tumour heterogeneity in squamous cell carcinoma*
- **Alain Chariot:** EUR 297,000/year  
University of Liège  
*Dissecting oncogenic pathways*
- **Jean-François Collet:** EUR 279,000/year  
Catholic University of Louvain  
*Discovering the molecular mechanisms involved in the protection of the bacterial cell envelope from stress: a step towards the design of new antimicrobial drugs*
- **Alban de Kerchove d'Exaerde:** EUR 293,000/year  
Free University of Brussels  
*Genetic identification of the neural circuits involved in attention deficit and hyperactivity disorders*
- **Yves Dufrêne:** EUR 258,000/year  
Catholic University of Louvain  
*Staphylococcus aureus biofilms: understanding bacterial adhesion and developing new anti-adhesion strategies*
- **Decio L. Eizirik:** EUR 291,000/year  
Free University of Brussels  
*Beta cell splicing signature of diabetes*
- **Benoît Van den Eynde:** EUR 297,000/year  
Catholic University of Louvain  
*Finding new immunotherapy targets in the tumour microenvironment by in vivo shRNA pool screening in autochthonous melanomas and by studying hypoxia-driven immunosuppression*
- **Pierre Vanderhaeghen:** EUR 297,000/year  
Free University of Brussels  
*Using human pluripotent stem cells to understand brain diseases and for the design of novel brain repair therapies*

- **Emile Van Schaftingen:** EUR 297,000/year  
Catholic University of Louvain  
*Metabolite repair and metabolic diseases*
- **Miikka Vikkula:** EUR 297,000/year  
Catholic University of Louvain  
*Development of diagnostic tools for lymphoedema*

“Starting grants” for 2015–2017 (renewable in 2017):

- **Christophe Desmet:** EUR 150,000/year  
University of Liège  
*Study of the regulation of hematopoiesis and T cell fate through translational control*
- **Isabelle Migeotte:** EUR 150,000/year  
Free University of Brussels  
*Role of mechanical forces and cytoskeletal rearrangements in epithelial-mesenchymal transition and cell migration at mouse embryo gastrulation.*
- **Kristel Van Steen:** EUR 150,000/year  
University of Liège  
*DESTINCT: Detecting statistical interactions in complex traits*
- **Valérie Wittamer:** EUR 150,000/year  
Free University of Brussels  
*Ontogeny of microglia, the resident macrophages of the central nervous system*

## 2. WELBIO INVESTIGATORS

The fact that WELBIO investigators have received **PRESTIGIOUS SCIENTIFIC AWARDS**, year after year, is testimony to the excellence of the results obtained.

In 2016:

- Patrice Cani, WELBIO Investigator at UCL, FNRS qualified investigator, received (together with his colleague Dr. Nathalie Delzenne) the Prize of the Professor Lucien Dautrebande Physiopathology Foundation (2013-2015). Patrice Cani is also a 2016 "Chaire Bauchau" award recipient at the University of Namur.
- Alban de Kerchove d'Exaerde, WELBIO Investigator at ULB, was elected member of the “Mental Disorders Research” Committee of the Fondation de France.
- Benoît Van den Eynde, WELBIO Investigator at UCL, was appointed “*Professor of Tumour Immunology*” at the University of Oxford.

## 3. RESEARCH TEAMS

Between 1 February 2011 and 31 December 2016, **386 PERSONS** worked on WELBIO projects together with principal investigators.

Most are scientists (~70 %), supported in their work by laboratory technicians.

Around one third of the staff are subsidised by WELBIO, with the remaining members being supported by the ERC, the FNRS, the FRIA, as well as Télévie and the Foundation Against Cancer.

At the end of 2016, 192 persons were working on 22 WELBIO projects underway. 27 scientists and 18 laboratory technicians are benefiting from a contract directly related to a WELBIO project, which amounts to 40.5 full-time equivalent employees.

Recruitments for the projects initiated at the end of 2015 continued at the beginning of 2016, which explains the slight increase in the number of persons working on WELBIO projects at the end of 2016, as compared with the end of 2015.

## 4. SCIENTIFIC PUBLICATIONS

**52 PUBLICATIONS** appeared in 2016 in reputable journals, particularly in prestigious reviews such as *Nature*, *Science*, *Cell*, *Nature Cell Biology* and *Cell Stem Cell*.

Some of the most important publications:

- Uncovering the number and mode of growth of cardiac progenitors during heart morphogenesis (C. Blanpain)

Chabab, S., Lescroart, F., Rulands, S., Mathiah, N., Simons, B. D. & Blanpain, C. *Uncovering the Number and Clonal Dynamics of Mesp1 Progenitors during Heart Morphogenesis*. **Cell Rep. 14, 1-10 (2016)**.

- Development of new techniques to assess the fate of stem cells in vivo (C. Blanpain)

Wuidart, A., Ousset, M., Rulands, S., Simons, B. D., Van Keymeulen, A. & Blanpain, C. *Quantitative lineage tracing strategies to resolve multipotency in tissue-specific stem cells*. **Genes Dev. 30, 1261-1277 (2016)**.

- Cancer: stem cell dynamics (C. Blanpain)

Sánchez-Danés, A., Hannezo, E., Larsimont, J.-C., Liagre, M., Youssef, K. K., Simons, B. D. & Blanpain, C. *Defining the clonal dynamics leading to mouse skin tumour initiation*. **Nature 536, 298–303 (2016)**.

- Skin cancer: the cell of origin in cancer influences the epithelial-mesenchymal transition (C. Blanpain)

Latil, M., Nassar, D., Beck, B., Boumahdi, S., Wang, L., Brisebarre, A., Dubois, C., Nkusi, E., Lenglez, S., Checinska, A., Vercauteren Drubbel, A., Devos, M., Declercq, W., Yi, R. & Blanpain, C. *Cell-Type-Specific Chromatin States Differentially Prime Squamous Cell Carcinoma Tumor-Initiating Cells for Epithelial to Mesenchymal Transition.* **Cell Stem Cell** **20**, 191–204.e5 (2017).

- Asthma: ULG Investigators discover a type of eosinophils with a protective and beneficial role (F. Bureau)

Mesnil, C., Raulier, S., Paulissen, G., Xiao, X., Birrell, M.A., Pirottin, D., Janss, T., Starkl, P., Ramery, E., Henket, M., Schleich, F.N., Radermecker, M., Thielemans, K., Gillet, L., Thiry, M., Belvisi, M.G., Louis, R., Desmet, C., Marichal, T., & Bureau, F. *Lung-resident eosinophils represent a distinct regulatory eosinophil subset.* **Journal of Clinical Investigation**, **126(9)**, 3279-3295 (2016).

- Intestinal bacteria, metabolism and cardiometabolic risk factors: new progress (P. Cani)

Plovier, H., Everard, A., Druart, C., Depommier, C., Van Hul, M., Geurts, L., Chilloux, J., Ottman, N., Duparc, T., Lichtenstein, L., Myridakis, A., Delzenne, N. M., Klievink, J., Bhattacharjee, A., van der Ark, K. C. H., Aalvink, S., Martinez, L. O., Dumas, M.-E., Maiter, D., Loumaye, A., Hermans, M. P., Thissen, J.-P., Belzer, C., de Vos, W. M. & Cani, P. D. *A purified membrane protein from Akkermansia muciniphila or the pasteurized bacterium improves metabolism in obese and diabetic mice.* **Nat Med** **23**, 107–113 (2017).

Dao, M. C., Everard, A., Aron-Wisnewsky, J., Sokolovska, N., Prifti, E., Verger, E. O., Kayser, B. D., Levenez, F., Chilloux, J., Hoyles, L., Dumas, M.-E., Rizkalla, S. W., Doré, J., Cani, P. D. & Clément, K. *Akkermansia muciniphila and improved metabolic health during a dietary intervention in obesity: relationship with gut microbiome richness and ecology.* **Gut** **65**, 426 LP-436 (2016).

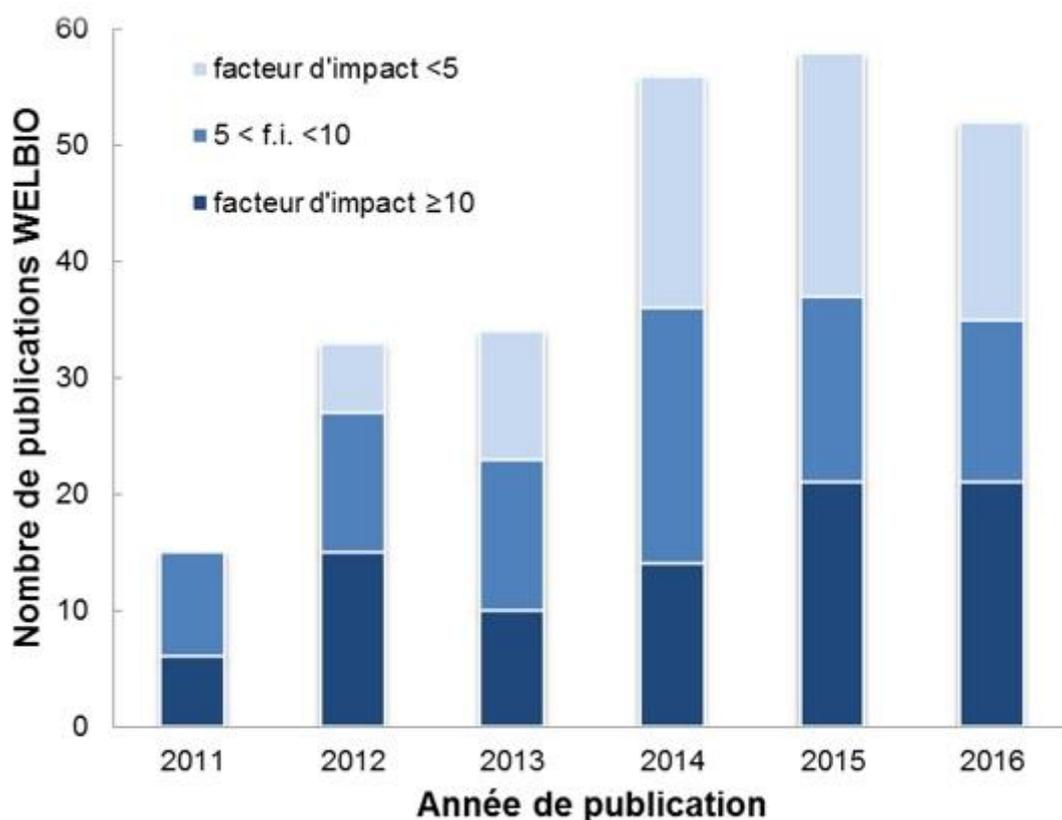
- New progress in the understanding of breast cancer leads to a new pharmacological track (A. Chariot)

Delaunay, S., Rapino, F., Tharun, L., Zhou, Z., Heukamp, L., Termathe, M., Shostak, K., Klevernic, I., Florin, A., Desmecht, H., Desmet, C. J., Nguyen, L., Leidel, S. A., Willis, A. E., Büttner, R., Chariot, A. & Close, P. *Elp3 links tRNA modification to IRES-dependent translation of LEF1 to sustain metastasis in breast cancer.* **J. Exp. Med.** **213**, 2503–2523 (2016).

- Role of the SasG protein in *Staphylococcus aureus* biofilm formation (Y. Dufrêne)  
  
Formosa-Dague, C., Speziale, P., Foster, T. J., Geoghegan, J. A. & Dufrêne, Y. F. *Zinc-dependent mechanical properties of Staphylococcus aureus biofilm-forming surface protein SasG*. **Proc. Natl. Acad. Sci. U. S. A.** **113**, 410–415 (2016).
- Antibacterial therapy & nanotechnologies (Y. Dufrêne)  
  
Beaussart, A., Abellán-Flos, M., El-Kirat-Chatel, S., Vincent, S. P. & Dufrêne, Y. F. *Force Nanoscopy as a Versatile Platform for Quantifying the Activity of Antiadhesion Compounds Targeting Bacterial Pathogens*. **Nano Lett.** **16**, 1299–1307 (2016).
- Immature cortical neurons change the fate of apical progenitors through a Wnt7–Celsr3–Fzd3 signal (A. Goffinet)  
  
Wang, W., Jossin, Y., Chai, G., Lien, W.-H., Tissir, F. & Goffinet, A. M. *Feedback regulation of apical progenitor fate by immature neurons through Wnt7–Celsr3–Fzd3 signalling*. **Nat. Commun.** **7**, 10936 (2016).
- Glue for blocking the T lymphocytes function of our immunity system (P. van der Bruggen)  
  
Petit, A.-E., Demotte, N., Scheid, B., Wildmann, C., Bigirimana, R., Gordon-Alonso, M., Carrasco, J., Valitutti, S., Godelaine, D. & van der Bruggen, P. *A major secretory defect of tumour-infiltrating T lymphocytes due to galectin impairing LFA-1-mediated synapse completion*. **Nat. Commun.** **7**, 12242 (2016).
- Discovery of a new post-translational modification in eukaryotes (E. Van Schaftingen)  
  
Gerin, I., Ury, B., Breloy, I., Bouchet-Seraphin, C., Bolsée, J., Halbout, M., Graff, J., Vertommen, D., Muccioli, G. G., Seta, N., Cuisset, J.-M., Dabaj, I., Quijano-Roy, S., Grahn, A., Van Schaftingen, E. & Bommer, G. T. *ISPD produces CDP-ribitol used by FKTN and FKRP to transfer ribitol phosphate onto  $\alpha$ -dystroglycan*. **Nat. Commun.** **7**, 11534 (2016).
- Discovery of a new metabolite repair enzyme (E. Van Schaftingen)  
  
Collard, F., Baldin, F., Gerin, I., Bolsee, J., Noel, G., Graff, J., Veiga-da-Cunha, M., Stroobant, V., Vertommen, D., Houddane, A., Rider, M. H., Linster, C. L., Van Schaftingen, E. & Bommer, G. T. *A conserved phosphatase destroys toxic glycolytic side products in mammals and yeast*. **Nat Chem Biol** **12**, 601–607 (2016).

Welbio investigators have also published a number of “review” articles in reputable journals:

- Nassar, D. & Blanpain, C. Cancer Stem Cells: Basic Concepts and Therapeutic Implications. **Annu. Rev. Pathol. Mech. Dis. 11, 47-76 (2016).**
- Cani, P. D., Plovier, H., Van Hul, M., Geurts, L., Delzenne, N. M., Druart, C. & Everard, A. Endocannabinoids [mdash] at the crossroads between the gut microbiota and host metabolism. **Nat Rev Endocrinol 12, 133–143 (2016).**
- Tilg, H., Cani, P. D. & Mayer, E. A. Gut microbiome and liver diseases. **Gut 65, 2035 LP-2044 (2016).**
- Xiao, J. & Dufrêne, Y. F. Optical and force nanoscopy in microbiology. **Nat Microbiol. 1, 16186 (2016).**
- Op de Beeck, A. & Eizirik, D. L. Viral infections in type 1 diabetes mellitus — why the  $\beta$  cells? **Nat. Rev. Endocrinol. 12, 263-273 (2016).**



## 5. Towards the 4<sup>th</sup> call for projects

Since its establishment, WELBIO has operated by means of calls for projects. These calls are launched every two years. Thus, two project batches are supported at the same time. The integration of WELBIO into the Fund for Strategic Fundamental Research (FRFS) resulted in a shift of the call calendar in 2015. The FRFS and WELBIO have agreed to align the 2017 call for projects to the calendar of the 2015 call for projects. Thus, the 4<sup>th</sup> CALL for projects will be launched at the beginning of 2017, while projects will start on 1 October 2017. Initially, the 8 WELBIO projects initiated in 2013 were scheduled to end on 31 January 2017. An 8-month extension has been granted to these projects in order to ensure the coordination with the 2017 call for projects.

A strategic analysis work concerning the 4<sup>th</sup> call for projects has been carried out within the “call for projects” working group set up within WELBIO. This working group is made up mainly of academic partners of the BoD of WELBIO. The working group’s conclusions were communicated to the BoD of FRFS with a view to defining the rules and methods of this new call.

## COMMERCIALISATION

One of the specificities of WELBIO is the attention paid to the industrial commercialisation potential of discoveries. To this end, WELBIO invests in the individualised support of its investigators in establishing a research integrated strategy of result commercialisation and, by working closely with members of companies-university interfaces of the host universities, it supports the development and commercialisation of the inventions.

However, we must understand that WELBIO funds fundamental research projects the outcome of which is, by definition, uncertain and that several years are required between the initiation of a project and the conduct of commercialisation activities. The research funded by WELBIO is supposed to be innovative, but it is risky. Only part of the projects will reach concrete industrial commercialisation. Thus, the commercialisation of WELBIO fundamental research projects must be approached from different angles: protection of intellectual property, research projects downstream of WELBIO, collaboration with the industry or new major funding, of the European Research Council (ERC) type.

### 1. INVENTION ANNOUNCEMENTS AND PATENT APPLICATIONS

At the end of 2016, 17 invention ANNOUNCEMENTS were submitted as part of 11 research projects. PATENT APPLICATIONS have been submitted for 5 INVENTIONS and are still active for 3 of them.

## 2. COOPERATION AND LICENCE OPTION AGREEMENT

The cooperation between arGEN-X and the laboratories of Pierre Coulie (UCL – WELBIO 2011-2015) and Sophie Lucas, registered a very positive evolution in 2016. An agreement was signed between arGEN-X and AbbVie, leading to the payment of \$40,000,000 by AbbVie to arGEN-X. According to the terms of the cooperation and exclusive licence option agreement signed with arGEN-X, part of this amount will be allocated to WELBIO, through UCL, in 2017. Thus, WELBIO will obtain its **1<sup>st</sup> RETURN ON INVESTMENT**, demonstrating the relevance of its operational model.

## 3. BRIDGE FUND

The Bridge Fund is intended for WELBIO investigators and aims at ensuring the transition from fundamental research to the development of a set of results facilitating a funding request for more applied research or the conclusion of a cooperation and licence agreement, or even planning the creation of a spin-off.

Concrete commercialisation tracks have emerged from various WELBIO projects, but they require additional research, for example, in order to confirm the potential of a therapeutic target by an in vivo model proof of concept. **3 Bridge FUNDS** have been allocated in 2016:

- Pierre Coulie / Sophie Lucas (UCL) – 18 months, budget of EUR 149,500  
The tumours contain lymphocytes (white blood cell mediators of our immunity) some of which are able to specifically recognize cancer cells and destroy them. However, this destruction does not always take place. Understanding the mechanisms responsible for this failure is particularly important for the development of new anti-cancer treatments, grouped together under the name of "immunotherapy". These treatments aim at increasing the number and activity of anti-tumour lymphocytes, for example by means of immunostimulator medicines. Pierre Coulie's 2011-2015 WELBIO project enabled a better understanding of the mechanism through which certain specialized lymphocytes (the "Tregs") inhibit lymphocyte activity, allowing tumours to evade the immune system.

The subsidy allocated by WELBIO to Pierre Coulie's laboratory for 18 months, allows the laboratory team to continue its work towards the development of therapeutic agents inhibiting Treg lymphocytes in cancer patients.

- Pierre van der Bruggen (UCL) – 18 months, budget of EUR 149,994  
Cancer patients develop immune responses directed against tumour-specific antigens. Thus, specific immune cells, called lymphocytes, can infiltrate tumours. However, the function of these lymphocytes is often prevented by immunosuppression mechanisms which allow tumours to evade the immune system and develop. Pierre van der Bruggen has discovered a mechanism whereby the Galectin family of molecules, produced by cancer cells, bind to the surface of T lymphocytes and disrupt their functioning. Pierre van der Bruggen's

2011-2015 WELBIO project enabled progress to be made in understanding this lymphocyte activity inhibition mechanism.

The subsidy allocated by WELBIO to Pierre van der Bruggen's laboratory for 18 months, will allow the laboratory team to continue its work towards the development of therapeutic agents which could block this immunosuppression mechanism.

- Pierre Roger (ULB) – 18 months, budget of EUR 115,000  
Cancers are, at least in part, diseases caused by the disruption of the cell cycle. Therefore, it is essential to understand the steps of the cell cycle regulation and, particularly, to identify the modifications occurring in cancer pathologies. This research can enable the identification of new therapeutic anti-cancer approaches intended to block cell proliferation. Pierre Roger's 2011-2015 WELBIO project enabled a better understanding of the regulating mechanisms of CDK4 and CDK6 cyclin-dependent kinases. The detection of a specific post-translational modification could be correlated with sensitivity to these kinase inhibitors.

The subsidy allocated by WELBIO to Pierre Roger's laboratory for 18 months, allows the laboratory team to continue its work towards the development of diagnostic tools that can predict the patients' response to cyclin-dependent kinase inhibitors, a new type of anticancer medicine.

## 4. BIOWIN

WELBIO has naturally established a close relation with BioWin, the "health" cluster of the Walloon Region, to ensure that the major efforts made to date in life sciences research have a long-term impact on the socio-economic future and quality of healthcare for Wallonia, Brussels and Belgium.

Since WELBIO is focused on excellence in fundamental research, it operates upstream in an innovation chain where BioWin, which is focused on applied research, is an actor located further downstream. WELBIO and BioWin think that their respective actions and impacts can be consolidated through a partnership and the establishment of a logistic interaction. To this end, WELBIO and BioWin updated their [PARTNERSHIP AGREEMENT](#) at the end of 2016.

Several WELBIO Investigators are involved in the IT-Targets project ("Identification of drug candidates and biomarkers for immunotherapy (cancer and auto-immune diseases)") labelled by BioWin in October 2016.

ITEos Therapeutics, ChemCom, ImmunXperts S.A., Institut de Duve and IRIBHM [Institute of Interdisciplinary Research in Human and Molecular Biology] received a EUR 1.6 million subsidy for the first stage of this BioWin project. This collaboration aims at identifying several potentially innovative biomarkers and medicines for immunotherapy use for several types of cancer, starting with tissue extracted from the patients' tumours. The IT-Targets project will focus on G protein-coupled receptors

(GPCRs), selected by analysing the most important types of immune cells, which are purified starting from clinical samples.

## 5. NEW IMPORTANT FUNDING:

In addition to the progress in the collaboration with arGEN-X, in April 2016, Sophie Lucas obtained an **ERC CONSOLIDATOR GRANT** funding for a project aimed at continuing studies on the inhibition of the GARP protein in murine tumour models. The description of the results previously obtained due to the WELBIO funding of the program carried out by Pierre Coulie has been crucial for obtaining this funding.

WELBIO is also glad that Yves Dufrêne has obtained an **ERC ADVANCED GRANT** funding (October 2016) for his staphylococcal biofilms study project with the new nanotechnology tools, complementary to the WELBIO project.

Patrice Cani is the winner of an **“ERC PROOF OF CONCEPT”** funding awarded to ERC Grant holders, the first one to have been awarded to a Belgian Francophone investigator for his Microbes4U project. This is an interventional study aimed at studying the metabolic effects of the Akkermansia muciniphila bacterium in overweight or obese subjects associated with cardiometabolic risk factors (prediabetes, type 2 diabetes, hypercholesterolemia, inflammation).

## 6. SPIN-OFFS

No spin-off company directly derived from WELBIO projects has yet been created. Nevertheless, Welbio investigators' commitment to create companies is illustrated by two recent spin-off creation projects, based on the research carried out before the investigators in question received WELBIO funding. The first one is dedicated to therapies based on the intestinal microbiota (treatment of obesity) while the second is dedicated to the imaging of pancreatic beta cells (treatment of diabetes).

## WELBIO'S FUTURE

A new expanded Board of Directors, the results of five years of activity, the launch of several "Bridge Fund" projects, preparations for the 2017 call for projects, as well as the reorganisation of the Fund for Strategic Fundamental Research (FRFS) with the emphasis on transversal and global management, bringing together the strategic focuses and expanding WELBIO's scope in the direction of sustainable development themes are all events that have determined WELBIO to reflect on its mission, its future and its position within the Walloon biotech landscape.

WELBIO's Board of Directors has thus adopted its strategic plan<sup>1</sup> during its meeting of 28 November 2016. This plan is built around an ambitious vision of WELBIO, the ability to act of which will have to be increased to offer a stable and stimulating framework to the best junior or advanced life science investigators, and to maximise the impact of their research activities for the socioeconomic development of Wallonia.

**4 STRATEGIC FOCUSES** are thus defined to fulfil this vision by 2020:

- 1 - Build up WELBIO's research portfolio
- 2 - Develop WELBIO's role as an actor for industrial innovation
- 3 - Transform WELBIO into a real institute
- 4 - Accountability ("Responsible Research")

Through this plan, WELBIO wishes to confirm that its action is primarily in the field of very high level fundamental research. This research involves risk-taking and the need for a long-term vision.

WELBIO's mission is reaffirmed: commercialising scientific discoveries toward industrial applications. The research portfolio must be managed consistently with this mission.

In addition, WELBIO wishes to offer its investigators the most stimulating environment possible. This desire must be reflected in multiple actions: significant (even competitive) funding, personalized support, exchanges/partnerships between WELBIO teams, training, the lightest possible administration and, eventually, a potential evolution towards supporting Investigators rather than projects. An analysis will be conducted in 2017 towards a new WELBIO working model.

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<sup>1</sup> [http://welbio.org/cms/c\\_10255/fr/plan-strategique-2020](http://welbio.org/cms/c_10255/fr/plan-strategique-2020)

## ADMINISTRATIVE AND FINANCIAL RESOURCES

### GOVERNANCE AT WELBIO ASBL

The Board of Directors of WELBIO asbl consists of representatives from academia, industry and government. In accordance with article 33 of WELBIO asbl's articles of association, the directors do not receive any payment for the services they provide, except for the reimbursement of all expenses incurred.

The Board of Directors is chaired by Jean Stéphane, with Jacques Dumont as Deputy Chairman. WELBIO adopted new articles of association in 2016<sup>2</sup>, particularly in order to expand the Board of Directors to 3 university representatives of the Wallonia-Brussels Federation, as well as to a 4th representative from the industrial sector. At the end of 2016, the composition of the Body is as follows:

Representatives of the Walloon Government:

- Philippe Busquin, Minister of State, representative of the Minister-Chairman
- Pierre Leonard, Deputy Chief of Staff, representative of the Minister for Economic Affairs
- Vincent Yzerbyt, Professor, UCL, representative of the Minister responsible for research and new technologies

Representatives of the economic and industrial sector with an interest in life sciences:

- Jean-Pierre Delwart, President Eurogentec SA
- Frédéric de Sauvage, Vice-President, Genentech
- Jean Stéphane, administrator of various companies in the biotechnology sector
- Jean-Christophe Tellier, CEO, UCB

Internationally recognized academic experts in the life sciences sector

- Jacques Dumont, Professor, Free University of Brussels
- Louis Hue, Professor, Catholic University of Louvain
- Pierre Lekeux, Professor, University of Liège

Representatives of universities within the French Community

- Rudi Cloots, Vice-Rector for Research, ULg
- Jean-Christophe Renauld, Pro-Rector for Research, UCL
- Serge Schiffmann, Vice-Rector for Research and Regional Development, ULB

Representative of the Fund for Scientific Research (F.R.S.-FNRS)

- Véronique Halloin, General Secretary

Representative of the Public Service of Wallonia - General Operational Directorate for Economy, Employment and Research (DGO6)

- Isabelle Quoilin, Managing Director

WELBIO would like to thank Marcel Crochet, Benoît Bayenet and Didier Malherbe for their contribution to WELBIO within the previous Board of Directors.

<sup>2</sup> [http://welbio.org/cms/c\\_8656/fr/structure-et-management](http://welbio.org/cms/c_8656/fr/structure-et-management)

## MANAGING DIRECTOR

Mr. Pierre Van Renterghem joined WELBIO as Managing Director on 1 October 2015. Pierre Van Renterghem has held various positions in the industrial, academic and institutional sectors. After obtaining his PhD in sciences at the Free University of Brussels (ULB) and after a post-doctoral training at the KU Leuven / VIB, he joined Bristol-Myers Squibb as Data Management Scientist. His background in molecular biology and his professional experience in data management led him to develop the National DNA data banks at the National Institute of Criminalistics and Criminology (NICC). He led the Biology section of the NICC before he joined Europol as Senior Specialist in charge of forensic intelligence and international DNA data exchanges. His role then evolved towards defining information management strategies and coordinating the development of Europol's information processing systems. Apart from his primary activities in criminalistics and international police cooperation, Pierre Van Renterghem has performed various teaching tasks both in universities and in professional settings.

## FUND FOR STRATEGIC FUNDAMENTAL RESEARCH

In 2013, WELBIO's administrative structure changed. Following the decrees approving the cooperation agreement of 4 December 2012 between the French Community and the Walloon Region concerning the funding of strategic fundamental research in the framework of cross-policies, WELBIO was integrated, as a delegated mission of Wallonia, into the Fund for Strategic Fundamental Research (FRFS) as a strategic line of Life Sciences. The FRFS is an affiliated fund of the FNRS, tasked by the Walloon Government with organising the administrative and financial management of calls for projects for Wallonia's strategic lines of research.

WELBIO asbl is established as a Platform for leadership and commercialisation of FRFS-WELBIO for the strategic line of Life Sciences.

## FINANCIAL RESOURCES

When it was founded by the Walloon Government on 12 December 2008, WELBIO was given an initial budget of EUR 15 million. In December 2012, the Walloon and Wallonia-Brussels Federation Governments guaranteed WELBIO an annual budget of EUR 6 million. Since 2014, the WELBIO subsidy has been paid to FRFS. An amount equal to 10% of this subsidy (minus 4% which covers the administrative operation of the FRFS and the Scientific Commission) is paid to WELBIO asbl.

In the current budgetary context, this subsidy was paid neither in 2015, nor in 2016. The impact of this lack of subsidy could be mitigated by the establishment of a transversal management of the Fund for Strategic Fundamental Research, decided by the Walloon Government during its meeting of 12 May 2016. This decision allowed the FRFS-WELBIO to meet its budgetary commitments for ongoing projects.

## THE MANAGEMENT REPORT OF WELBIO ASBL

### *Preamble*

This is the seventh accounting year, covering the period between 1 January 2016 and 31 December 2016.

Although WELBIO is considered to be a small not-for-profit association with regard to the criteria of the Law of 2 May 2002, double entry accounts are kept.

The cooperation agreement of 4 December 2012 between the French Community and the Walloon Region concerning the funding of strategic fundamental research in the framework of cross-policies provides that, as of 2013, the Walloon Region should allocate at least EUR 6 million to FRFS-WELBIO each year. As of 2014, this subsidy is paid directly to the FNRS and 9.6% of this subsidy (EUR 576,000) is allocated to WELBIO asbl for its management costs and the Bridge Fund.

### *Assets*

Tangible fixed assets total EUR 3,700.05 and consist of IT equipment.

Financial assets total EUR 3,450.00 and consist of the security for the rented office space in Wavre.

Cash investments total EUR 1,856,372.05 and are presented in the form of two reserves in order to allocate WELBIO's remaining liquid assets.

As at 31 December 2016, the sum of the available liquid assets in WELBIO's various bank accounts comes to:

Green account:	EUR 710,133.29
Flexibonus:	EUR 3,687.10
Demand account:	EUR 1,142,551.66
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	EUR 1,856,372.05

These liquid assets are allocated as follows:

Running costs (2017):	EUR 233,100.00
Bridge Fund:	EUR 1,623,272.05
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	EUR 1,856,372.05

Adjustment accounts total EUR 281.92 and consist of deferred charges.

**Total assets come to EUR 1,860,354.02.**

## *Liabilities*

Permanent cash receipts total EUR 25,363,116, distributed as follows:

- Research fund subsidies: EUR 5,000,000 paid on 21/01/2010
- Sofipôle subsidies: EUR 2,500,000 paid on 31/12/2009
- Sofipôle subsidies: EUR 2,500,000 paid on 14/08/2012
- S.R.I.W. : EUR 5,000,000 paid on 28/03/2013
  
- Walloon Region excluding Marshall Plan 2.Green: EUR 1,000,000 on 14/02/2014
- Walloon Region Marshall Plan 2.Green: EUR 2,000,000 on 17/02/2014
- Walloon Region Marshall Plan 2.Green: EUR 3,000,000 on 10/09/2014
  
- 2014 - FNRS-FRFS for 2013–2015 agreements: EUR 2,635,116 on 25/06/2015
- 2014 - FNRS-FRFS - running costs and Bridge Fund: EUR 576,000 on 05/02/2015
- 2015 - FNRS-FRFS - running costs and Bridge Fund: EUR 576,000 on 10/11/2016
- 2016 - FNRS-FRFS - running costs and Bridge Fund: EUR 576,000 on 14/12/2016

Loss carried forward totals EUR 23,536,673.60, and is broken down as follows:

- Profit for the 2010 financial year: EUR 15,659.14
- Loss for the 2011 financial year: EUR 2,341,408.43.
- Loss for the 2012 financial year: EUR 3,961,616.53.
- Loss for the 2013 financial year: EUR 6,821,707.25.
- Loss for the 2014 financial year: EUR 9,911,942.51.
- Loss for the 2015 financial year: EUR 203,747.81.
- Loss for the 2016 financial year: EUR 311,910.21

Accounts payable total EUR 283.62.

Estimated tax expenses total EUR 81.63 in 2015.

Estimated tax expenses total EUR 75.80 in 2016.

Outstanding wage tax totals EUR 4,804.91.

Outstanding social security contributions total EUR 3,636.55.

Remuneration payable for December 2016 totals EUR 5,395.53.

Provisions for holiday pay total EUR 19,633.58

**Total liabilities come to EUR 1,860,354.02**

## *Result*

Three new Bridge Fund agreements started in 2016 and three advance payments totalling EUR 82,899.00 were disbursed.

Miscellaneous goods and services total EUR 50,553.34 and consist mainly of running costs and fees.

Remuneration and social security contributions total EUR 178,323.28.

Depreciation totals EUR 833.74.

Estimated tax expenses total EUR 75.80.

Net bank interest, after deducting the withholding tax, totals EUR 715.00.

Financial costs total EUR 115.05.

**The result for the financial year is a loss of EUR 311,910.21.**

## CONTACT

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