



**Annual
Report**

2013

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INTRODUCTION

WELBIO is an inter-university life sciences research institute with 23 programmes of excellence. WELBIO is characterised by the individual support for WELBIO investigators to develop the valorisation potential of their research from the very outset of the project. Inventions are developed working closely with the host universities and, in particular, with members of technology transfer offices.

When founded by the Walloon Government on 12 December 2008, WELBIO received an initial budget of €15 million. In December 2012, the Walloon and Wallonia-Brussels Federation Governments guaranteed WELBIO an annual budget of €6 million.

To date, around 70 articles have been published in prestigious journals such as *Nature* and *Neuron*, and in other renowned journals including *Proc Natl Acad Sci USA*, highlighting the excellence of the WELBIO programmes. In addition, the filing of three patent applications, as well as meetings between the WELBIO investigators and clinical and industrial players, underline the attention given to the valorisation of results.

2013 saw several new developments:

- WELBIO launched eight new research programmes selected by an international Scientific Committee. These programmes, which particularly recognise talented junior investigators, come in addition to the 15 programmes in progress. WELBIO is thus consolidating its position in the scientific landscape.
- WELBIO established the internal "Bridge Fund" to initiate the development of the intellectual property resulting from the institute's research programmes. The Bridge Fund forms a bridge between funding of fundamental research leading to an invention and other "downstream" funding sources to develop that invention.
- WELBIO joined the Fund for Strategic Fundamental Research (FRFS) as Wallonia's strategic axis for life sciences. The FRFS is a fund associated to the FNRS and was given the responsibility by the Walloon Government to manage administratively and financially calls for projects for Wallonia's strategic axes of research.

In conclusion, in 2013, the institute is now counting 23 research programmes of excellence, established financial resources to initiate the valorisation of results generated by its research programmes, and consolidated its administrative structure. Thus, five years after the publication of the Walloon Government memorandum defining the principle behind the creation of WELBIO (available on <http://welbio.org>), the now well-established institute has solid foundations for launching a new call for projects.

START OF EIGHT NEW RESEARCH PROGRAMMES

Two years after the beginning of its first 15 research programmes, WELBIO launched a new call for projects, this time with an emphasis on talented junior investigators, with a new “starting grant” category dedicated to them. These junior investigators must have no more than 12 years of post-doctoral experience. They must also have demonstrated their scientific independence as last author of several publications and their ability to set up their own research team. Furthermore, they must have a guaranteed salary, independently of the project, for its entire term. Experienced investigators apply in the “advanced grant” category.

Based on the ranking established by the international Scientific Committee, the Governing Board decided to fund a total of eight projects, including five in the “starting grant” category, for a total budget of €3,900,000 over 2 years.

These eight new research programmes started on 1 February 2013 and cover themes as varied as obesity, type 2 diabetes, chronic inflammatory bowel disease, asthma and cystic fibrosis.

"Starting grants" started on 01/02/2013



Fabrice Bureau – €200,000/year
Université de Liège

Ontogeny and molecular differentiation pathways of lung interstitial macrophages



Patrice D. Cani – €200,000/year
Université catholique de Louvain

Study of the interactions existing between the gut microbiota and the host: impact on the onset of obesity and type 2 diabetes.



Stanislas Goriely – €200,000/year
Université libre de Bruxelles

Transcriptional control of memory CD8 T cell differentiation



Cédric Govaerts – €200,000/year
Université libre de Bruxelles

Structural characterisation of CFTR using nanobodies



Charles Pilette – €200,000/year
Université catholique de Louvain

Impaired mucosal immunity in severe asthma

"Advanced grants" started on 01/02/2013



Michel Georges – €350,000/year

Université de Liège

Integrating genetics and functional genomics to identify causative genes and variants controlling inherited predisposition to inflammatory bowel disease



André Goffinet – €250,000/year

Université catholique de Louvain

Mechanisms of brain wiring



Marc Parmentier – €350,000/year

Université libre de Bruxelles

Role of leucocyte chemotactic factors in tumor progression

EXCELLENCE IN RESEARCH

1. WELBIO INVESTIGATORS

The results obtained by WELBIO investigators are the fruit of numerous years of research. The excellence of these results is highlighted, year after year, by the awarding of prestigious scientific honours to WELBIO investigators, such as the Francqui Prize (2011, to Dr. Pierre Vanderhaeghen, ULB), the Clerdent Prize (2011, to Dr. Pierre Maquet, ULg), the Francqui Chair (2012, to Dr. Emile Van Schaftingen, UCL), the ISSCR Prize (2012, to Dr. Cédric Blanpain) and inclusion in the *Nature* Top 10 (2012, Dr. Cédric Blanpain).

It is equally remarkable that five WELBIO investigators [Drs. Jean-François Collet (UCL), Patrice Cani (UCL), Pierre Vanderhaeghen (ULB), Cédric Blanpain (ULB) and Michel Georges (ULg)] obtained European Research Council (ERC) funding between 2011 and 2013.

In 2013, Dr Miikka Vikkula (UCL) and Dr Michel Georges (ULg) were also rewarded for the excellence of their work.



The 2013 InBev-Baillet Latour Prize for Clinical Research was awarded to Miikka Vikkula (UCL).

Miikka Vikkula (UCL) and Laurence Boon (Clinique universitaires Saint-Luc) received the prize for their research into vascular anomalies and lymphoedema. Their work relates to localised defects in the blood and/or lymphatic vessels, which can have various presentations. Up to 10% of the population may be affected, particularly due to the frequency of

infantile hemangioma.



Michel Georges (ULg), newly-elected member of the prestigious National Academy of Science.

Michel Georges, professor of animal genetics at the Faculty of Veterinary Medicine at ULg and WELBIO investigator, director of the GIGA-Genetics unit and winner of the 2008 Francqui Prize, is one of the 21 newly-elected foreign members of the prestigious National Academy of Sciences. He joins renowned Belgian scientists such as Thierry Boon (Ludwig Institute for Cancer Research Ltd), Jacques Drèze (UCL), Eric Lambin (UCL) and Marc Van Montagu (Ghent University).

2. RESEARCH TEAMS

In 2013, in order to successfully carry out the 23 funded research programmes, WELBIO investigators employed a cumulative total of 226 people. This is a 50% increase compared to 2012, largely as a result of the start of eight new research programmes on 1 February 2013 following the second call for projects.

Most are scientists (approximately 75%), supported in their work by laboratory technicians.

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

Of this cumulative total of 226 positions, 168 contracts are still current. The difference is mainly accounted for by scientists who have defended their doctoral thesis or completed their post-doctoral studies.

3. SCIENTIFIC PUBLICATIONS

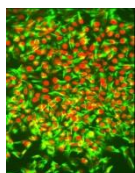
In 2013, more than thirty publications appeared in prestigious journals such as *Nature* and *Neuron*, which have an “impact factor” greater than 10, and in other renowned journals such as *Proc Natl Acad Sci USA*, which has an “impact factor” greater than 5. Most notably:



Uzureau, P., Uzureau, S., Lecordier, L., Fontaine, F., Tebabi, P., Homblé, F., Grélard, A., Zhendre, V., Nolan, D., Lins, L., Crowet, J.M., Pays, A., Felu, C., Poelvoorde, P., Vanhollebeke, B., Moestrup, S.K., Lyngso, J., Pedersen, J.S., Mottram, J.C., Dufourc, E. J., Pérez-Morga, D. and Pays, E.

Mechanism of Trypanosoma brucei gambiense resistance to human serum.

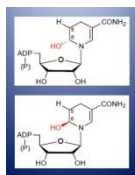
Nature (2013) 501:430-434



Espuny-Camacho, I., Michelsen, K., Hasche, A., Bali, C., Gall, D., Bilheu, A., Herpoel, A., Gaspard, N., Schiffmann, S.N., Gaillard, A., and Vanderhaeghen P.

Pyramidal Neurons Derived from Human Pluripotent Stem Cells Integrate Efficiently into Mouse Brain Circuits In Vivo.

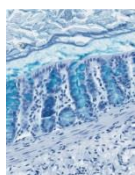
Neuron (2013) 77: 440-456



Linster CL, Van Schaftingen E, Hanson AD

Metabolite damage and its repair or pre-emption.

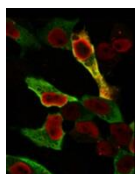
Nat Chem Biol (2013) 9: 72-80



Everard A, Belzer C, Geurts L, Ouwerkerk JP, Druart C, Bindels LB, Guiot Y, Derrien M, Muccioli GG, Delzenne NM, de Vos WM, Cani PD.

Crosstalk between Akkermansia muciniphila and intestinal epithelium controls diet-induced obesity.

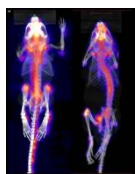
Proc Natl Acad Sci USA (2013) 110: 9066-9071



Ysebrant de Lendonck L, Tonon S, Nguyen M, Vandevenne P, Welsby I, Martinet V, Molle C, Charbonnier LM, Leo O, Goriely S.

Interferon regulatory factor 3 controls interleukin-17 expression in CD8 T lymphocytes.

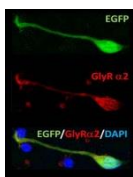
Proc Natl Acad Sci USA (2013) 110: E3189-E3197



Molle C, Zhang T, Ysebrant de Lendonck L, Gueydan C, Andrianne M, Sherer F, Van Simaey G, Blackshear PJ, Leo O, Goriely S.

Tristetraprolin regulation of Interleukin-23 mRNA stability prevents a spontaneous inflammatory disease.

J Exp Med (2013) 210: 1675-1684



Avila, A., Vidal, P.M., Dear, T.N., Harvey, J.H., Rigo, J.-M., and Nguyen, L.

Glycine Receptor $\alpha 2$ Subunit Activation Promotes Cortical Interneuron Migration.

Cell Rep (2013) 4: 738-750

THE BRIDGE FUND TO SUPPORT VALORISATION

Following the filing of three patent applications, WELBIO identified the need to set up a flexible funding process to initiate the development of the intellectual property resulting from its research programmes. This gave rise to the Bridge Fund.

The Bridge Fund forms a bridge between funding of fundamental research leading to an invention and other "downstream" funding sources to develop that invention. It aims to strengthen the intellectual property and/or to increase the probability of accessing other "downstream" funding sources or a licensing agreement.

The Bridge Fund is solely for inventions resulting from a WELBIO programme and is not intended to fund an extension of the fundamental research.

The "Bridge" application is prepared by the WELBIO investigator and must be approved by the Valorisation Committee before its submission to the WELBIO Governing Board for a funding decision. The application is accompanied by a patent database search and an expert opinion.

The annual budget for the Bridge Fund is voted by the WELBIO Governing Board. There are several application dates each year to ensure a timely decision-making process. Funding ranges from €50,000 to €150,000 for a period of 6 to 18 months.

WELBIO: THE LIFE SCIENCES STRATEGIC AXIS OF THE FRFS

The FRFS (Fund for Strategic Fundamental Research) was set up in December 2012, at the proposal of Minister Nolle, by the Walloon and Wallonia-Brussels Federation Governments.

The FRFS is part of the Walloon and Wallonia-Brussels Federation Governments' 2011-2015 strategy "Towards an integrated research policy", in line with the European Horizon 2020 objectives to strengthen the research and innovation chain. The 2011-2015 programme established the following strategic themes: sustainable development, renewable energies and research in the field of technology, health, and increasing life expectancy and quality of life.

The FRFS is an associated fund of the FNRS and brings together several fundamental research support mechanisms that mobilise the combined efforts of Wallonia and the Wallonia-Brussels Federation. The governance of the Fund is performed by a Governing Board. The FNRS implements the FRFS' missions. The Walloon

Government has given the FNRS the responsibility of managing administratively and financially calls for projects for the strategic axes of research in Wallonia.

WELBIO is the life sciences strategic axis of the FRFS.

ADMINISTRATIVE AND FINANCIAL RESOURCES

Governance at WELBIO

The Governing Board consists of representatives from academia, industry and government. The Board is chaired by Jean Stéphane, with Jacques Dumont as Deputy Chairman. The composition of the Board is as follows:

Representatives of the Walloon Government:

- Philippe Busquin, Minister of State
- Marcel Crochet, Honorary Rector, Université catholique de Louvain
- Benoît Bayenet, Representative of the Office of Minister Marcourt

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

- Jean Stéphane, former Chairman and President, GlaxoSmithKline Biologicals
- Didier Malherbe, Vice-President, UCB
- Jean-Pierre Delwart, CEO, Eurogentec SA

Representatives of French-speaking university academies

- Jacques Dumont, Professor, Université libre de Bruxelles (Wallonia-Brussels Academy)
- Louis Hue, Professor, Université catholique de Louvain (Louvain Academy)
- Pierre Lekeux, Professor, Université de Liège (Wallonia-Europe Academy)

Representative of the FNRS

- Véronique Halloin, Secretary-General, Fonds de la Recherche Scientifique (FNRS)

Representative of SPW/DG06

- Yves Sennen, Director-General, represented par Pierre Villers, Inspector-General

Management report

Preamble

- This is the fourth financial year, covering the period between 1 January 2013 and 31 December 2013.
- 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.
- WELBIO's evaluation rules specify that subsidies are assessed based on cleared received amounts. The portion of the subsidies granted but not yet received is not shown in the accounts. The total budget comes to EUR 30 million, EUR 15 million of which had been received and cleared on the closing date of the accounts.

Assets

- Tangible fixed assets total EUR 173.95 and consist of IT equipment.
- Financial assets total EUR 3,450.00 and consist of the security for rented office space in Wavre.
- Cash investments total EUR 1,751,410.51, distributed as follows:
 - Livret vert: EUR 1,747,737.75
 - Flexibonus: EUR 3,672.76
- Available cash totals EUR 151,367.27 and consists of a demand account.
- Adjustment accounts total EUR 16,220.60, distributed as follows:
 - Accrued income: EUR 16,220.60

Total assets come to EUR 1,922,622.33.

Liabilities

- Permanent cash receipts total EUR 15,000,000, 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
- Loss carried forward totals EUR 13,109,073.07, 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
- Accounts payable total EUR 1,196.54
- Invoices receivable total EUR 1,200.00
- Outstanding wage tax totals EUR 4,710.80

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- Outstanding social security contributions total EUR 1,699.09
- Provisions for holiday pay total EUR 22,888.97

Total liabilities come to EUR 1,922,622.33

Result

- Claim declarations accepted and paid total EUR 6,639,791.00.
- Miscellaneous goods and services total EUR 43,835.83, and consist mainly of fees and expenses for scientific experts.
- Remuneration and social security contributions total EUR 160,389.40.
- Depreciation totals EUR 298.05.
- Net bank interest, after deducting the discharging withholding tax of 21%, totals EUR 22,860.71.
- Financial costs total EUR 253.68.

The result for the financial year is a loss of EUR 6,821,707.25.

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