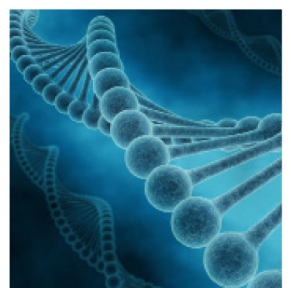
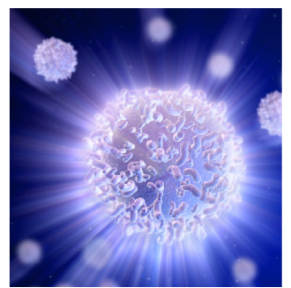
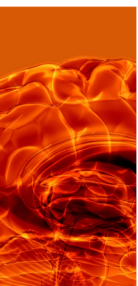
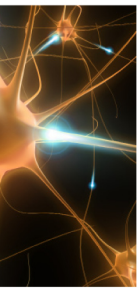
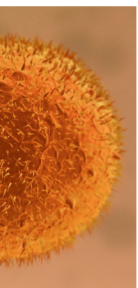


VIB is a life sciences research institute, based in Flanders, Belgium. We perform basic research with a strong focus on translating scientific results into pharmaceutical, agricultural and industrial applications



synopsis
Annual Report 2014
VIB ACTIVITIES IN 2013



VIB pursues excellence in life sciences, tech transfer and HR. Europe confirms VIB's ambitions.

At the end of 2013, the number of prestigious ERC (European Research Council) grants awarded to VIB members reached 24. Europe also bestowed the HR Excellence in Research label on VIB in recognition of its excellence-driven HR management. In 2013, VIB scientists generated groundbreaking new knowledge that resulted in 168 publications in top-ranked journals (top 5%) 69 of them in the top ranked journals in the field (top 1%).

The greatest challenge for VIB is translating this knowledge into tangible products or services with added social and/or economic value. In 2013, a lot of hard work was done to accomplish this. VIB's talent is not going unnoticed. For instance, VIB group leader Nico Callewaert (VIB/UGent) was selected by Nature Biotechnology as one of the 'Top 20 Translational Researchers' of 2013.

In 2013, VIB submitted 37 new patent applications to protect the intellectual property of its scientists' valuable findings. Today VIB owns a knowledge portfolio of 218 patent families. These are actively out-licensed to companies (114 agreements in 2013) or combined into technology platforms that can serve as the basis for starting up new firms.

AgroSavfe, a new VIB startup specialized in sustainable crop protection, was launched in 2013. Since then, VIB has been working on new biotech startups but is dealing with two bottlenecks: the recruitment of CEOs/managers able to lead these startups and attracting the necessary capital. VIB is considering various initiatives to overcome these barriers in the future.

To put the Flemish biotech cluster on the map, VIB traveled to the US and the fastest growing agricultural market, Brazil, in 2013. Participating in international conventions stimulates collaboration and strengthens the Flemish biotech cluster. VIB is aware that good communication is essential, and all the more so when the topic is

Structure VIB

VIB is a non-profit research institute, financed by the Flemish Government, with scientists at the UGent, KU Leuven, University of Antwerp and Vrije Universiteit Brussel.

Gent

- VIB Headquarters
- VIB Inflammation Research Center, UGent
- VIB Department of Plant Systems Biology, UGent
- VIB Department of Medical Protein Research, UGent
- VIB Proteomics Expertise Center, UGent (PEC)
- VIB BioInformatics Training and Service Facility (BITS)
- VIB Compound Screening Facility, UGent (CSF)
- VIB Protein Service Facility, UGent (PSF)
- Institute of Plant Biotechnology Outreach (IPBO)
- VIB Bio Imaging Core
- VIB Bio-incubator

Leuven

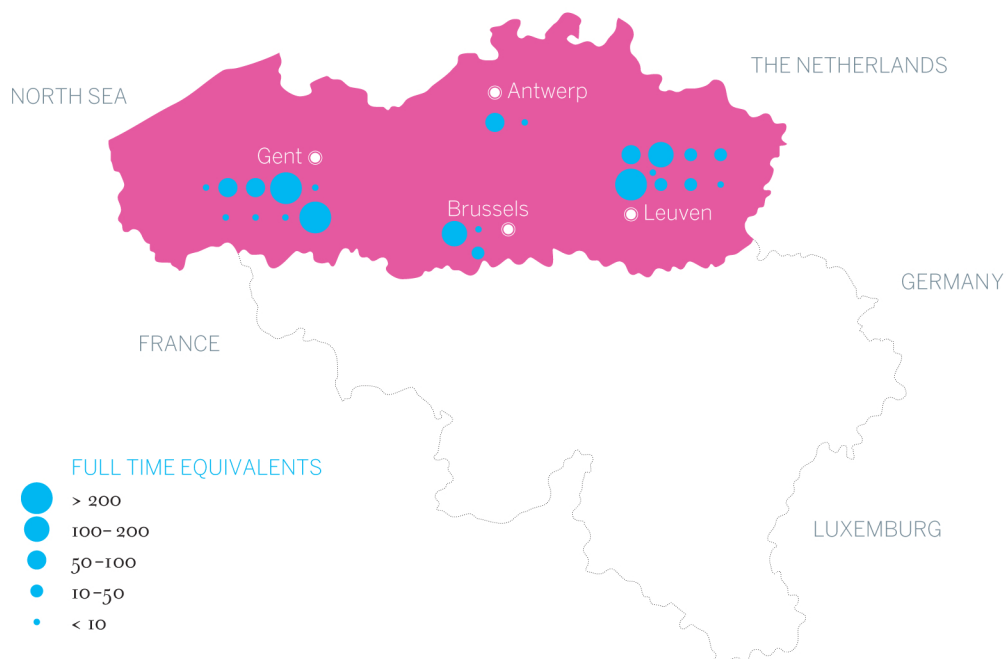
- VIB Center for the Biology of Disease, KU Leuven
- VIB Vesalius Research Center, KU Leuven
- VIB Department of Molecular Microbiology, KU Leuven
- VIB Switch Laboratory, KU Leuven
- VIB Laboratory of Systems Biology, KU Leuven
- Neuro-Electronics Research Flanders, VIB, Imec, KU Leuven
- VIB Autoimmune Genetics Laboratory, KU Leuven
- VIB Nucleomics Core
- VIB Bio Imaging Core
- Bio-incubator

Antwerp

- VIB Department of Molecular Genetics, University of Antwerp
- VIB Genetic Service Facility, University of Antwerp (GSF)

Brussels

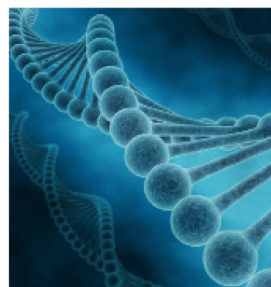
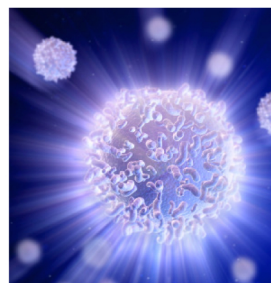
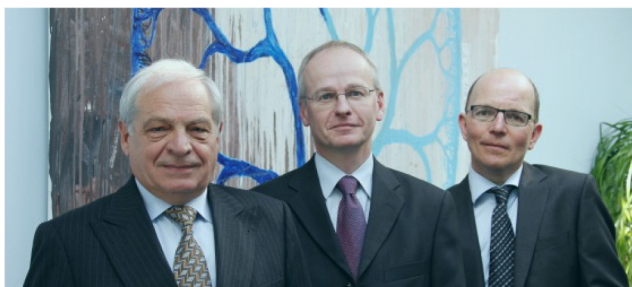
- VIB Structural Biology Research Center, Vrije Universiteit Brussel
- VIB Laboratory Myeloid Cell Immunology, Vrije Universiteit Brussel
- VIB Nanobody Service Facility, Vrije Universiteit Brussel (NSF)



green biotech. Although VIB plant research ranks among the top in the world, Europe is lagging behind with its regulations and cultivation permits. VIB and its scientists will have to help inject reason into this extremely polarized debate. Europe must not continue to ignore this opportunity.

VIB also attracted international attention in the field of red biotechnology in 2013. Numerous groundbreaking findings about the molecular mechanisms of various diseases are currently being assessed by the pharmaceutical and biotech industries for the purpose of developing innovative drugs against serious illnesses with great medical needs. Think of oncological, inflammatory and neurodegenerative diseases. VIB scientists are definitely doing their bit.

Staf Van Reet, chairman of the Board
Jo Bury and Johan Cardoen, managing directors



World-Class Science

In 2013, 168 articles were published in top journals, a recognition for VIB's excellence-driven research



Mutations in the SHP-1 gene are associated with various inflammatory and autoimmune diseases in people. The mechanism behind this was thus far unknown. In collaboration with American colleagues, **Mo Lamkanfi** and his team identified a new inflammatory circuit that explains how changes in SHP-1 lead to inflammatory disease, a discovery that was revealed in Nature.

LUKENS ET AL., NATURE 2013



CORE FOR LIFE

In 2013, two new alliances were created on the initiative of VIB and CRG (Centre for Genomics Regulation, Spain).

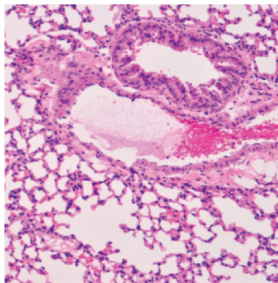
As members of **Core for Life** (www.coreforlife.eu), six European research centers in life sciences are now able to share their technology and expertise.

The mission of the **EU-LIFE** alliance is to promote research, share knowledge and provide input into the political decisions affecting the life sciences (www.eu-life.eu).

EU-LIFE's 13 partners are well-known research centers that apply the same principles regarding excellence, external reviews, independence, competitiveness and internationalization.



eulife



The lab of **Adrian Liston** has identified genes that play a critical role in determining the number of T-inhibitor cells in the body thus controlling immune response strength. This discovery could be important for the development of new drugs for the treatment of immune diseases.

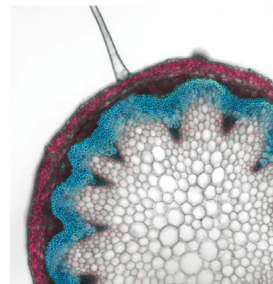
PIERSON ET AL., NAT IMMUNOL 2013



Tumor necrosis factor (TNF) appears to be a promising cancer drug. However, it causes many serious side effects.

Research by **Claude Libert**'s team indicates that TNFR1 is an ideal target for the development of a new cancer drug with fewer side effects.

VAN HAUWERMEIREN ET AL., J CLIN INVEST 2013



Studying the model plant *Arabidopsis thaliana*, **Wout Boerjan** and his team discovered a new step in the production of lignin. This discovery may potentially lead to the development of bioenergy crops, e.g. poplars, which both have lower lignin content and are more easily biodegradable.

VANHOLME ET AL., SCIENCE 2013

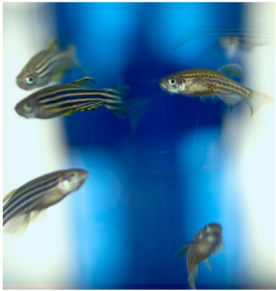
Collaboration between the labs of **Anna Sablina**, **Kris Gevaert** and **Jan Tavernier** led to a paper in Nature Cell Biology. Their study suggests that ubiquitin-dependent RAS modification could be a target for a new treatment of cancer caused by mutations in the RAS gene.

SIMICEK ET AL., NAT CELL BIOL 2013



There is an asthma epidemic in the Western world, but we do not know what is causing it. New forms of prevention and treatment are urgently needed. Research by **Bart Lambrecht**'s team has led to new insights in the interaction between dendritic and epithelial cells in asthma.

PLANTINGA ET AL., IMMUNITY 2013



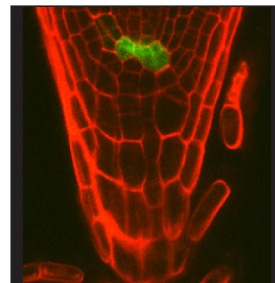
An international consortium that includes researchers from the team of **Peter De Jonghe** has demonstrated that errors in the CHD2 gene lead to Dravet syndrome, a severe form of epilepsy. These findings could be used to develop a new test for identifying Dravet syndrome in children quickly and effectively. SULLS ET AL., AJHG 2013



The foundation for interest in science is laid at a young age. With this in mind, VIB has designed a brand new school project called 'Wetenschap op Stap'. VIB hopes to generate enthusiasm for life sciences in grade 5 and 6 students by bringing 'real researchers' into the classroom.



The first edition of 'Patients Meet Scientists' took place on October 13, 2013. Parkinson patients and their caregivers were invited to an informative chat with young scientists (PhD students and post-docs) from VIB, KU Leuven and Janssen Pharmaceutica. They were also invited to visit the VIB-KU Leuven labs of **Bart De Strooper** and **Patrik Verstreken**.



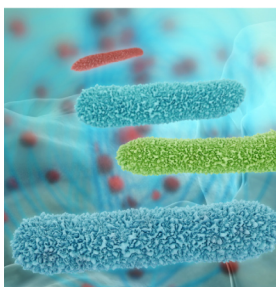
Just like people and animals, plants have stem cells. These are vital for the renewal of all cell types in an organism. The lab of **Lieven De Veylder** has discovered a new step in the complex regulation of these stem cells. Certain organizing stem cells in plant roots turn out to be less sensitive to DNA disruptions. HEYMAN ET AL., SCIENCE 2013



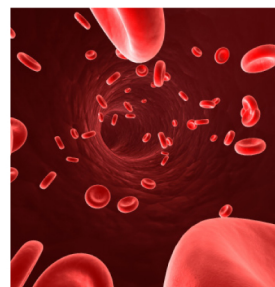
Acute lymphatic leukemia (ALL) is the most common cancer in children under 14 years of age. The team of **Jan Cools** has identified new genetic mutations that lead to ALL. The researchers unmasked ribosome and other protein complexes as the weak spot in leukemia cells. DE KEERSMAECKER ET AL., NAT GENET 2013



Jasmonates are plant hormones that play an important role in the defense of plants. The labs of **Alain Goossens** and **Johan Thevelein** succeeded in identifying the underlying mechanisms by which jasmonates manage the production of bioactive defense molecules to resist attackers while maintaining plant integrity. POLLIER ET AL., NATURE 2013



Bacteria can survive under difficult and life-threatening circumstances by temporarily going to sleep. Understanding this mechanism is important for the development of antibiotics. **Remy Loris'** group has discovered how a cell can decide whether to keep growing thanks to an enzyme that inhibits protein synthesis. CASTRO-ROA ET AL., NAT CHEM BIOL 2013

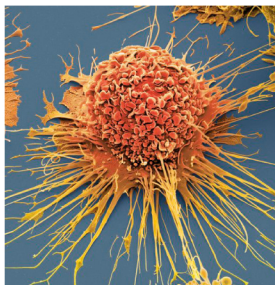


Peter Carmeliet's team has found a new method for inhibiting the development of blood vessels by blocking the supply of an energy source. Inhibiting angiogenesis or vessel sprouting is a commonly used treatment in e.g. cancer. The fact that glycolysis is only partially and temporarily reduced limits the side effects.

DE BOCK ET AL., CELL 2013
SCHOORS ET AL., CELL METABOLISM 2013



In 2013, two international technology meetings were organized in Flanders (both in Gent): 'ICG-2013' (Genomics) and 'Genome Engineering and Synthetic Biology: Tools and Technologies.' The presence of top names from academia and industry in these technology fields ensured that both events were very well attended. Events like these enhance the international profile of VIB and Flanders.



Max Mazzone and his team uncovered a mechanism that explains why the antitumor activity of specific immune cells (macrophages) is suppressed during tumor growth. However, macrophage antitumor activity can be restored by blocking the Nr1p1 protein. These findings throw new light on the combat against cancer.
CASAZZA ET AL., CANCER CELL 2013



HR EXCELLENCE IN RESEARCH

Designing a strategic HR plan was a major goal for 2013. Defining an HR strategy geared toward implementing the 'European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers' resulted in VIB being granted the European label **HR Excellence in Research**.

This flyer is a synopsis of VIB's activities in 2013. For a complete overview of our life sciences' breakthroughs, our tech transfer and communication activities, staff and financial data, we refer you to our website:

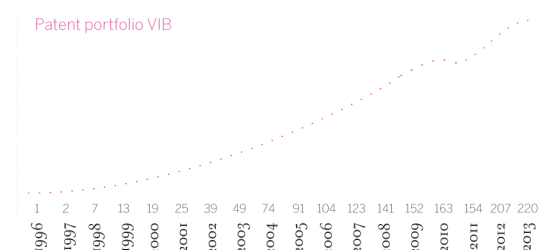
www.vib.be/annualreport

From top science to social added value

VIB takes a proactive approach geared towards protecting new inventions by patents. These inventions serve as the basis for new startups and agreements with life science companies and thus create economic and social added value.

VIB's patent portfolio: more than 200 active patent families

In 2013, the IP Management team evaluated 89 potential new inventions for patent protection and submitted 37 new priority applications. This is the highest number of patent applications ever filed since the creation of VIB. VIB's portfolio contains 218 active patent families with commercialization potential, while 29 patent families have already been transferred to VIB startups and other companies. To date, the number of patents awarded to VIB has risen to 222.



114 agreements signed with companies

In 2013, 114 agreements were signed with life sciences companies around the globe. This brings the total number of research and license agreements signed since VIB's inception to 1,131. VIB's partners are very diverse: from Flemish SMEs to multinationals, from large pharmaceutical corporations to small biotech firms, from food manufacturers to instrument makers, and from diagnostics companies to agrobiotech giants.

Around half of the agreements involve companies located in Flanders. These generated over €13 million in 2013, a considerable increase over 2012; 60% of the earnings were the result of R&D collaborations. These agreements also include provisions for future revenues (i.e. milestone payments and royalties).

AgroSavfe, a new VIB startup to strengthen the Flemish green biotech cluster

In 2013 a new VIB startup was launched under the name of AgroSavfe. It is based on the application of nano-

bodies technology for the development of innovative solutions for sustainable crop protection. Located in the VIB Bio-incubator in Gent, AgroSavfe was able to raise a startup capital of € 5 million from a broad-based international investor consortium.

From the start, VIB developed a strong track record for starting up new biotech companies based on knowledge and know-how developed within the institute. To date, it has founded 14 startups that collectively employ over 600 people and are endowed with €527 million in capital.

These companies actively participate in the biotech cluster while VIB continues to be a major partner in supporting their growth and development. Thanks to them, VIB also continues to build up a strong network of entrepreneurs and financiers.

The largest European research cluster in green biotechnology

The agrobiotech cluster at the Gent Technology Park is home to 900 workers. In 2012, one of VIB's startups (Devgen) was taken over by Syngenta, one of the larger multinationals in the agroindustry. With the presence of Bayer CropScience, BASF (which took over CropDesign, another VIB spinoff) and Syngenta, three global players are now engaged in major R&D activities as part of the Gent cluster. Last year, BASF/CropDesign moved to Bio-Accelerator II.

Devgen was rebaptized as the Syngenta Innovation Center and functions as a research center specialized in the broad application of RNAi technologies within Syngenta. Together with the VIB Department of Plant Systems Biology, UGent, one of the leading research

Product / indication	Preclinical	Phase I	II	III	Market
Anti-PlGF / safety				
ALS-protein therapy				
MALTi inhibitory small compounds				
Haematology / vWF				
Inflammation / TNFa				
Bone disorders / RANKL				
Pulmonary / RSV				
Immunology / IL-17F/IL-17A				
Immunology / IL-6R				
Neurology / BI 1034020				
Preclinical: n = 5				
Lactococcus / Mucositis				
Lactococcus / anti-TNF & IBD				
Lactococcus / IL-27 & IBD				

..... License
..... Startup

groups worldwide in agricultural technology, the cluster constitutes its very own ecosystem and is a solid foundation for attracting other startup and foreign companies.



VIB as catalyst for the growth of the Flemish biotech cluster

The proximity of a knowledge center such as VIB promotes interaction and collaboration with industry. This explains the clustering that is taking place around certain VIB departments. This is most pronounced at the Technology Park in Gent with a cluster also developing in Leuven. These clusters form their own ecosystems and play a major role in securing companies (in case they are taken over, e.g. CropDesign by BASF and Devgen by Syngenta) to the local knowledge-driven ecosystem, since access to innovations and talented personnel are important assets for ensuring future investments.

VIB has a supporting role in the development of the biotech cluster in Flanders. In 2013, several meetings and road shows (US and Brazil) were organized with the goal of drawing foreign companies to Flanders. Together with

other stakeholders, VIB set up a Flanders Welcome team. Thanks to proactive prospecting, contacts were made with 20 companies that are considering coming to Flanders.

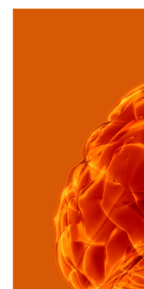
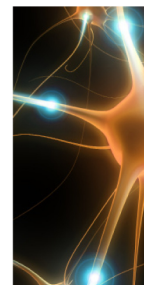
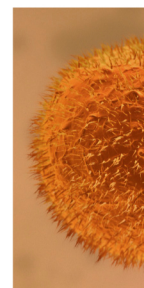
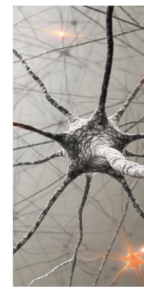
Quite a few foreign nationals are working for VIB and biotech companies located in Flanders. To support this ecosystem, VIB worked hard with others on getting an international school set up in Gent and Leuven.

VIB inventions on their way to patients and consumers

The surest method for creating social added value is developing new innovative drugs and therapies. Thanks to our partners, a growing number of diagnostics are finding their way to patients. Our drug pipeline has also grown in strength.

Appropriate infrastructure for biotech companies

VIB owns two biotech incubators at the Technology Park in Gent. Together with several academic and financial partners, the institute also invested in the three biotech incubators in Leuven and the two Bio-Accelerators in Gent. In total, these facilities provide 48,500 m² of space to young, growing Belgian and foreign biotech companies. At the end of 2013, they were home to 21 companies collectively employing 809 people.



Product/indication	Clinical Validation	Market
Molec. diagn. MALT lymphoma
Progranulin in FTLD
<i>Human Genetics</i>		
BRCA MASTR Dx
HNPC MASTR
FAP MASTR
CFTR MASTR
MARFAN MASTR
FMF MASTR
DMD MASTR
MODY MASTR
ADH MASTR
HCM MASTR
ALPORT MASTR
<i>Prenatal Genetics</i>		
Aneuploidy MAQ
<i>Onco Genetics</i>		
EGFR 18-21 MASTR
YEAST MASTR
Protein marker pre-eclampsin
Protein biomarker cardiorenal (heart failure diagnosis)
Protein biomarker cardiorenal (kidney function)
Protein biomarker ovarian cancer
Protein biomarker sepsis

..... License
..... Startup

Financial Statements 2013

Balance Sheet (€ thousands)

	31.12.2013	31.12.2012
ASSETS		
INTANGIBLE FIXED ASSETS	1.229	1.399
TANGIBLE FIXED ASSETS	33.060	32.697
FINANCIAL FIXED ASSETS	11.009	9.223
CONTRACTS IN PROGRESS	10.950	10.106
AMOUNTS RECEIVABLE WITHIN ONE YEAR	13.154	13.762
INVESTMENTS	72.287	63.573
CASH AT BANK AND IN HAND	4.468	8.718
DEFERRED CHARGES	10.070	8.431
TOTAL ASSETS	156.227	147.909
LIABILITIES		
ALLOCATED FUNDS	59.582	56.647
INVESTMENT GRANTS	28.688	27.747
AMOUNTS PAYABLE AFTER ONE YEAR	7.901	8.422
AMOUNTS PAYABLE WITHIN ONE YEAR	47.224	41.857
ACCRUED CHARGES AND DEFERRED INCOME	12.832	13.236
TOTAL LIABILITIES	156.227	147.909

Profit and Loss Statement (€ thousands)

	2013	2012
OPERATING INCOME	78.916	78.657
INCOME FROM PARTNERSHIPS	19.597	19.226
CONTRACTS IN PROGRESS (+/-)	844	-886
GRANTS AND SUBSIDIES	56.609	57.595
OTHER INCOME	1.866	2.722
OPERATING EXPENSES	-77.613	-76.674
RAW MATERIALS AND CONSUMABLES	-6.791	-7.532
SERVICES AND OTHER GOODS	-19.879	-19.143
REMUNERATION, SOCIAL SECURITY COSTS AND PENSIONS	-42.781	-40.092
DEPRECIATION	-7.356	-6.854
OTHER OPERATING EXPENDITURES	-806	-3.053
FINANCIAL INCOME	1.564	1.483
FINANCIAL CHARGES	-1.072	-598
EXTRAORDINARY INCOME	1.469	10
EXTRAORDINARY EXPENDITURE	-329	0
PROFIT/LOSS FOR THE FINANCIAL YEAR	2.935	2.878

Good Governance

On April 16, 2008, the Good Governance Charter proposed by the Board of Directors was adopted by VIB's Annual General Meeting. Now in effect, the Charter's complete text can be viewed on VIB's website (www.vib.be). VIB plans to review and update its good governance

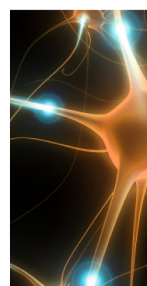
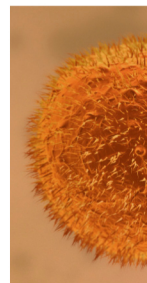
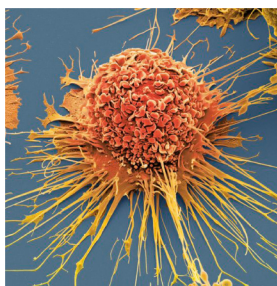
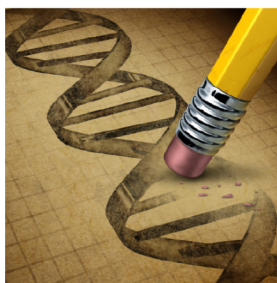
principles regularly in the light of local and international developments and to meet the needs of the stakeholders in the non-profit corporation.



VIB is a non-profit research institute in life sciences. About 1,300 scientists conduct strategic basic research on the molecular mechanisms that are responsible for the functioning of the human body, plants, and microorganisms.

Through a close partnership with four Flemish universities - UGent, KU Leuven, University of Antwerp, and Vrije Universiteit Brussel - and a solid funding program, VIB unites the forces of 83 research groups in a single institute. The goal of the research is to extend the boundaries of our knowledge of life profoundly. Through its technology transfer activities, VIB wants to convert research results into products for the benefit of consumers and patients.

VIB develops and disseminates a wide range of scientifically substantiated information about all aspects of biotechnology. More information: www.vib.be



HR EXCELLENCE IN RESEARCH

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