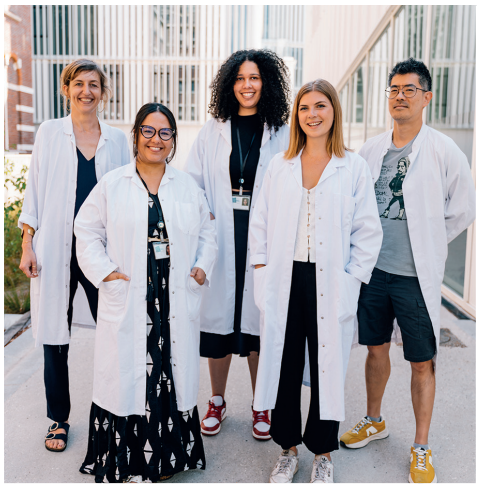
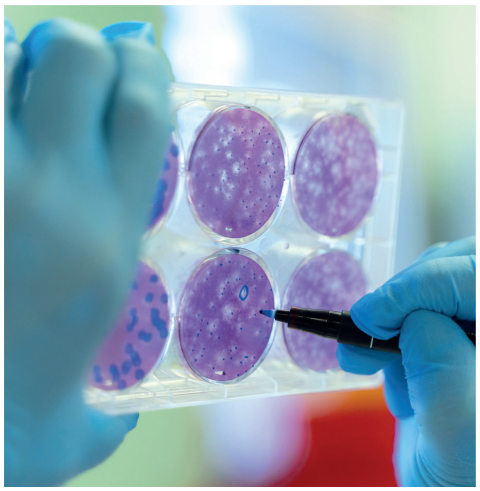
Institut Pasteur de Lille

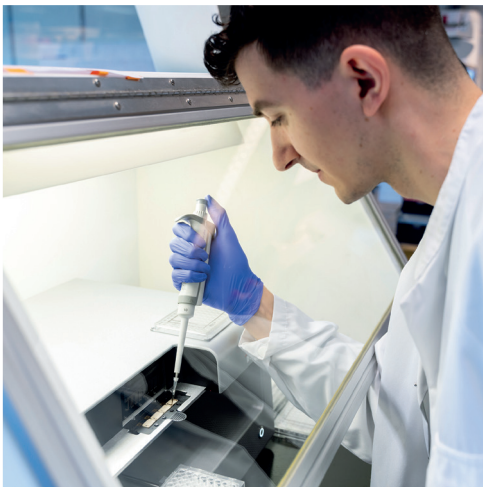
Vivre mieux
plus longtemps

ANNUAL REPORT 2023



SCIENCE at the service of HEALTH for all





PRIVATE FOUNDATION
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2023 was a year rich in scientific advances and action on the ground for both research and preventive healthcare. This report on our activities details some of the most significant ones, and all our news is available online on our website.

In terms of our research activities, 2023 was marked by the launch of a process of team accreditation by an International Scientific Council. The conclusions will support them in the Hcéres and supervisory authorities' evaluation processes with a view to the next five-year research period 2026-2030. This exercise, which is new to the Institute for our researchers, is important and reflects the scientific standards that bear the name of Louis Pasteur. It will help to structure the research supported by the Institut Pasteur de Lille in the coming years in accordance with an evaluation based on scientific criteria.

This process is part of the Institut Pasteur de Lille's scientific, organisational and managerial development project, which should enable it to consolidate its position as one of Europe's leading players in the field of Living Better Longer. This project is also reflected in the strategic real estate plan, which took two major steps forward in 2023, with the opening of the buildings on the corner of boulevard Louis XIV and rue du Maréchal Vaillant in the first half of 2024, the inauguration of our events building, 1894, and the handover of the Guérin building, dedicated to research, scheduled for summer 2024. In terms of preventive healthcare and expertise, 2023 was a year of major events and developments. However, after achieving positive results in 2022, these activities showed a slight decline in 2023. The economic situation and the international context, which are slowing down their growth, are also having an impact on the Foundation and require constant attention to ensure the sustainability of our activities. The economic crisis and the sharp rise in the cost of energy mean that we have to manage our operations even more carefully and seek to increase our financial resources by continually improving our activities with the companies and the general public who support us through their generosity. 2023 also saw a significant increase in the number of bequests, through which generous donors choose to continue their support.

In 2024, we will continue to involve the scientific community and all those involved in the Pasteur Campus in Lille. We will continue to develop our entire community: the men and women who are the source of the richness, renown and excellence of the Institut Pasteur de Lille. We will be supported in this by our new CEO, Frédéric Batteux, who will take up his post in September 2024.
2024 will mark the 130th anniversary of our Foundation. The best way we can prepare to celebrate this anniversary of the Institut Pasteur de Lille is to write the pages of its future together...

Didier Bonneau
Deputy managing Director

2024 : A NEW MANAGING DIRECTOR FOR THE INSTITUT PASTEUR DE LILLE

Frédéric Batteux, University Professor - Hospital Practitioner has been appointed Managing Director of the Institut Pasteur de Lille, and will take up his post in September 2024. Previously Head of the Biological Immunology Department at Hôpital Cochin in Paris, he was also Director of Strategy and Transformation at AP-HP (Greater Paris University Hospitals). Director of a research team at INSERM, his team's work focuses on pathogenesis and innovative treatments for chronic fibro-inflammatory diseases such as systemic scleroderma and endometriosis.
As Managing Director of the Institut Pasteur de Lille, Frédéric Batteux will be responsible for leading and coordinating the foundation's scientific and public health strategy.

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Design and production:
Communication and Philanthropic Development Department
Institut Pasteur de Lille, Alexandre Delobel, François Trottein, Feegraphik

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RISK FACTORS AND MOLECULAR DETERMINANTS OF DISEASES LINKED TO AGEING

UMR1167 «RID-AGE» : Université of Lille / Inserm / Lille University Hospital / Institut Pasteur de Lille - Prof. Philippe Amouyel

This unit analyses, explores and deciphers changes in and the impact of risk factors and molecular determinants of the main chronic diseases (cardiovascular and neurodegenerative) associated with ageing. They aim to offer new preventive healthcare and treatment options, paving the way for personalised medicine and longer disability-free life expectancy.
The teams that make up this unit work closely together, adopting a cross-disciplinary approach. Over the last ten years, this unit has made significant advances in understanding age-related diseases, paving the way for practical preventive healthcare procedures and the discovery of new drugs. It has gained international recognition with a strong focus on the general public, helping us to live better and for longer.

The research teams:

PUBLIC HEALTH AND MOLECULAR EPIDEMIOLOGY OF AGE-RELATED DISEASES
Aline Meirhaeghe

MOLECULAR DETERMINANTS OF CARDIAC REMODELLING AND HEART FAILURE
Florence Pinet

MOLECULAR DETERMINANTS OF ALZHEIMER'S DISEASE AND RELATED SYNDROMES
Jean-Charles Lambert

INTEGRATIVE STRUCTURAL BIOLOGY *
Isabelle Landrieu

GLYCATION: FROM INFLAMMATION TO AGEING
Eric Boulanger

MOLECULAR AND CELLULAR PATHOPHYSIOLOGY OF METABOLIC DISEASES
Jean-Sébastien Annicotte

FIND OUT MORE

* CRT CNRS

The project 'Characterisation of the genetics of Alzheimer's disease by very high throughput sequencing in a French population' by Dr Jean-Charles Lambert is being co-financed for a period of 2 years by Mutuelles AXA sponsorship as part of its health programme dedicated to supporting innovative research projects in France.

HIGHLIGHTS

Five modifiable risk factors (body mass index, systolic blood pressure, non-HDL cholesterol, current smoking and diabetes) are associated with cardiovascular disease and death from all causes. However, there is a dearth of studies assessing frequency and impact in different regions of the world. Individual data from 112 cohort studies conducted in 34 countries and 8 regions participating in the Global Cardiovascular Risk Consortium were pooled and harmonised for a total of 1,518,028 participants. The frequency of these risk factors was measured in a sample of 874,105,228 individuals. The associations between risk factors and the incidence of cardiovascular disease and death from all causes were examined. This study shows that 57.2% and 52.6% of cases of cardiovascular disease in women and men, respectively, and 22.2% and 19.1% of deaths from all causes in women and men, respectively, could be avoided each year if these five modifiable risk factors were systematically managed, demonstrating a major global prevention potential.

BUT ALSO…

We validated the use of multiplex approaches using Somalogic technology to identify a proteomic signature in patients from the REVE1 and REVE2 studies, patients who had suffered a myocardial infarction and were monitored for cardiac remodelling by echocardiography (baseline, three months and one year) and at 10 years post-infarction. We quantified 5,200 proteins in patients' plasma samples and showed that a subset of 50 proteins is capable of stratifying and predicting the long-term risk of hospitalisation for heart failure.

The research teams:

INTER-ORGAN DIALOGUE IN CARDIOMETABOLIC PATHOLOGIES
Bart Staels

CARDIAC PATHOLOGIES, BLOOD FLOW ABNORMALITIES AND HAEMOSTASIS
Sophie Susen / Eric Van Belle

IMMUNOMETABOLIC DIALOGUE IN OBESITY AND ITS COMORBIDITIES
David Dombrowicz

INTEGRATED TRANSCRIPTIONAL ANALYSIS OF LIVER DISEASE
Philippe Lefebvre

NUCLEAR RECEPTORS AND CIRCADIAN RHYTHMS IN PATHOPHYSIOLOGY
Hélène Duez

ENDOTHELIAL-MESENCHYMAL TRANSITION (EMERGING ATIP-AVENIR TEAM)
Anna Rita Cantelmo

FIND OUT MORE

CARDIO-METABOLIC DISEASES

RNMCD U1011 Inserm / Université of Lille / Lille University Hospital / Institut Pasteur de Lille - Prof. Bart Staels

This unit, headed by Professor Bart Staels, employs more than 130 people, including researchers, teachers, doctoral and post-doctoral students, engineers and technicians. The six teams in this research unit study the mechanisms behind alterations in lipid and glucose metabolism and the immune system, which occur in pathophysiological conditions. In particular, the researchers are studying metabolic syndrome, metabolic steatohepatitis MASH (formerly known as NASH) and type 2 diabetes, as well as its associated cardiovascular complications (atherosclerosis, heart failure, heart valve disease). To achieve this, researchers use complementary molecular and cellular biology approaches, as well as (patho)physiological approaches and integrated technological expertise.

HIGHLIGHTS

Obesity surgery and cardiovascular risk: new advances

The Roux Y gastric bypass is one of the most widely performed obesity surgeries in the world, with clearly proven efficacy in terms of weight loss and protection against cardiovascular disease and fatty liver disease (MASLD). Bart Staels' team has made a significant breakthrough in understanding the beneficial metabolic effects of this operation. This study, published in the Journal of Hepatology, analyses hepatic and plasma modulation of cholesterol metabolism following surgery. This work will enable better monitoring and management of cardiovascular risk and fatty liver disease in obese patients.

BUT ALSO...

David Dombrowicz's team has been approved by the Fondation Médicale de la Recherche (FRM) for a project looking at the role of the hexoseamine biosynthesis pathway in regulating the function of dendritic cells in psoriasis.

Sophie Susen was awarded an RHU contract as a partner (TIPITCH, New Treatment Strategies to Transform the Prognosis of Patients with Haemorrhagic Stroke).

Prof. Bart Staels received a Clarivate Highly Cited Researcher award in 2023.

INFECTIOUS AND INFLAMMATORY DISEASES

CIIL U1019 Inserm / UMR 9017 CNRS / Université of Lille / Lille University Hospital / Institut Pasteur de Lille - Dr Jean Dubuisson

The Lille Centre for Infection and Immunity (CIIL), directed by Jean Dubuison, comprises 17 research teams. The centre, which was set up in 2010, employs over 200 people, including researchers (including 2 ERCs), lecturers, PhD students/post-docs, engineers, and technicians. The researchers at this centre are biologists specialising in the study of pathogens and/or the immune response. The presence of chemists and biophysicists within the CIIL is an additional advantage, enabling us to offer technological developments in the fields of chemical protein synthesis and mechanobiology.
The CIIL is developing projects on the molecular and cellular mechanisms involved in infectious and also chronic inflammatory diseases. They aim to apply this knowledge to developing innovative approaches to diagnosing, treating and preventing these diseases while analysing their impact in the field.

The research teams:

CHEMOGENOMICS OF INTRACELLULAR MYCOBACTERIA
Priscille Brodin

MOLECULAR AND CELLULAR VIROLOGY
Jean Dubuisson

OPPORTUNISTIC INFECTIONS, IMMUNITY, ENVIRONMENT AND LUNG DISEASE
Philippe Gosset

BIOLOGY OF APICOMPLEXAN PARASITES: FACTORS REGULATING GROWTH, DIFFERENTIATION AND VIRULENCE
Jamal Khalife
Mathieu Gissot

CELLULAR AND PHYSICAL MICROBIOLOGY OF INFECTION
Oleg Melnyk

SEARCH FOR MYCOBACTERIA AND BORDETELLA
Nathalie Mielcarek

TROPICAL BIOMES AND IMMUNO-PATHOPHYSIOLOGY
Sylviane Pied

PLAGUE AND YERSINIA PESTIS
Florent Sebbane

BACTERIA, ANTIBIOTICS AND IMMUNITY
Jean-Claude Sirard

INFLUENZA, IMMUNITY AND METABOLISM
François Trottein

PULMONARY IMMUNITY
Philippe Lasalle

ECOLOGY AND PHYSIOPATHOLOGY OF INTESTINAL PROTOZOA
Eric Viscogliosi

CHEMICAL BIOLOGY OF ANTIBIOTICS
Ruben Hartkoorn

MECHANO-BIOLOGY OF HOST-MICROBE INTERACTIONS
Alexandre Grassart

CHRONICITY OF VIRAL INFECTIONS
Fernando Real

PVC BACTERIAL SUPERPHYLUM
Damien Devos

CELLULAR MICROBIOLOGY & PHYSICS OF INFECTION
Frank Lafont

FIND OUT MORE

HIGHLIGHTS

Ageing and viral respiratory infections: a new method of prevention and treatment?
In a recent study published in the journal Nature Aging, François Trottein's team, in collaboration with other CIIL teams, demonstrated the harmful role of senescent cells in COVID-19. These cells accumulate naturally with age, particularly in the lungs. Researchers have shown that infection with the SARS-CoV-2 virus increases the frequency of these cells in elderly individuals. Selective elimination of these cells using a senolytic drug reduces the viral load and improves lung pathology in the acute phase of the disease. The treatment also reduces the long-term symptoms associated with the infection (long COVID'). This study demonstrates the link between viral respiratory infection, ageing and associated pathologies for the first time. The results of this work point to promising therapeutic prospects in the field of viral infections in general.

BUT ALSO...

WHO validation of a diagnostic test for multidrug-resistant tuberculosis (Philip Supply)
Award of an ERC Synergy contract (Synergy Plague) (Florent Sebbane): "Reconstructing the environmental, biological, and societal drivers of plague outbreaks in Eurasia between 1300 and 1900 CE".

The research team:

M2SV: DRUGS AND MOLECULES TO ACT ON LIVING SYSTEMS

Benoit Deprez

FIND OUT MORE

Find out more:
www.deprezlab.fr

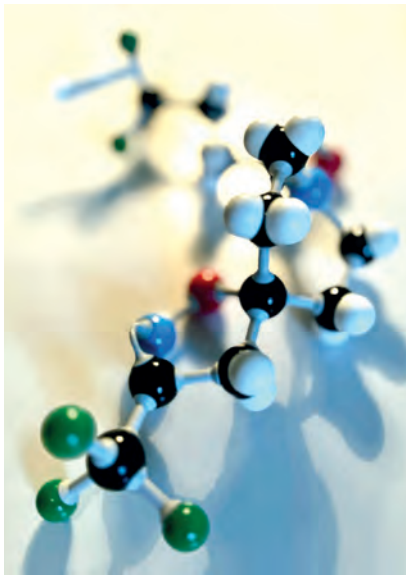
DISCOVERING NEW DRUGS

M2SV U1177 / Inserm / Institut Pasteur de Lille - Prof. Benoit Deprez

Researchers at the Drug Discovery Centre, working with biologists on campus and in other research centres around the world, are tasked with designing and synthesising drug prototypes with innovative modes of action targeting diseases where the medical need is poorly met. A number of areas are covered, including infectious diseases, immune system modulation, cancer and diabetes. The discovery of these molecules makes it possible to propose new therapeutic solutions and gain a better understanding, on an atomic scale, of the processes leading to pathologies. The Drug Discovery Center has a dual mission of exploring living organisms and what they call 'translational' research, which translates knowledge into new ways of acting in medicine. The drugs that the Drug Discovery Center develops are all small molecules, with a focus on economic and environmental sustainability.

HIGHLIGHTS

Alpibectir: a drug candidate for the treatment of multi-resistant tuberculosis. Alpibectir is a first-in-class molecule discovered by medicinal chemists at the Drug Discovery Center (Prof. Willand and Prof. Deprez) and the microbiologists at CIIL (Dr Alain Baulard). It has entered phase 2a of clinical trials, and the first patient with tuberculosis was treated in January 2023 with the alpibectir/ethionamide combination. Alpibectir is the result of a long optimisation and selection process that has enabled us to explore gene regulation in the M. tuberculosis bacterium. This process involved several industrial partners and substantial European funding.



BUT ALSO...

Julie Charton's team, working with CIIL virologists and structural biologist Xavier Hanoulle's team, has discovered **a series of broad-spectrum coronavirus protease inhibitors**. The project is now supported by a national consortium, with the aim of making us the leaders in the fight against possible new coronavirus pandemics. This project has also given us a better understanding of the dynamics of the virus protease, one of the key enzymes in the production of the structural and enzymatic constituents of the virus in our cells.

Inhibiting the NDH enzyme to treat multi-resistant tuberculosis. Dr Baptiste Villemagne's team has designed and optimised a new class of anti-tuberculosis drugs called TrisLa, in close collaboration with Dr Ruben Hartkoorn's team (CIIL), targeting an NADH dehydrogenase essential to the bacterium *Mycobacterium tuberculosis.*

Boosting antibiotics against Gram (-) bacteria Dr Marion Flipo's team has discovered and optimised a family of pyridylpiperazines, in collaboration with Dr Ruben Hartkoorn's team (CIIL). This family represents a new class of allosteric AcrB *E.coli* inhibitors that enhance the activity of antibiotics against this pathogen.

The group led by Rébecca Deprez-Poulain designs molecules that target the constituents of human cells to correct the mechanisms responsible for metabolic diseases, autoimmune diseases and cancer. Rebecca **set up and now runs a European consortium of twenty organisations, enabling 14 students to complete a to complete a doctoral thesis (PhD) in 3 years, fully funded by the European Union (www.capstone-etn.eu).** The project focuses on studying the presentation of antigens to the immune system by our body's cells and its modulation by small organic molecules. The team's recent discoveries have applications in autoimmune diseases, including Behcet's disease, rheumatoid arthritis, Birdshot's uveitis and cancer.

The research team:

METABOLIC FUNCTIONAL (EPI)GENOMICS AND ITS ABNORMALITIES IN TYPE 2 DIABETES AND ASSOCIATED DISEASES

Amélie Bonnefond

FIND OUT MORE

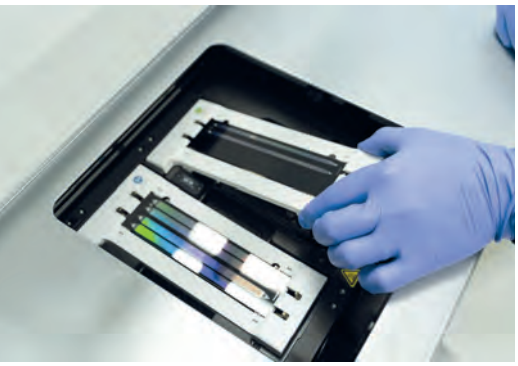
THE GENETICS OF DIABETES AND OBESITY

RNMCD U1283 Inserm / University of Lille / Lille University Hospital / Institut Pasteur de Lille - Prof. Bart Staels

This research unit, headed by Philippe Froguel, is organised around the: "Metabolic functional (epi)genomics and its abnormalities in type 2 diabetes and associated diseases" team, headed by Amélie Bonnefond. It employs over 60 people, including researchers, lecturers, PhD students/post-docs, engineers, and technicians. The unit is the originator of the LabEx-EGID, the EquipEx-LIGAN-PM, a genomics platform for personalised medicine, and the IHU PreciDIAB.

Type 2 diabetes (T2D) and associated disorders, including obesity, have reached global pandemic proportions and are the leading causes of morbidity and mortality, becoming a major public health burden. T2D results from the progressive impairment of insulin secretion by the β cells of the pancreas (within the islets) against a background of altered insulin action in sensitive organs and tissues. Obesity is clinically defined as a body mass index (BMI) greater than 30 kg/m^2. The inability to fully understand the multi-organ systemic pathophysiology of T2D and obesity has frustrated efforts to develop improved therapeutic and preventive strategies. While the environment is the primary determinant of T2D and obesity at a population level, a remarkable feature is the persistence of considerable disease risk among people sharing the same environment. T2D and obesity are complex polygenic disorders with an estimated heritability of between 40 and 70%. To date, thanks to genome-wide association studies (GWAS), we and others have identified several hundred susceptibility genes for the risk of T2D and BMI. However, the main challenge is that >90% of GWAS loci are found in intronic or intergenic non-coding regions, making it difficult to obtain functional and mechanistic information on how these DNA variants affect the risk of disease.

The team's main objective is to improve the care and disability-free life expectancy of patients with T2D and other metabolic disorders, including obesity. They are doing this by identifying new pathways involved in the physiopathology leading to the discovery of new therapeutic targets and by identifying and characterising specific genetic variants, leading to precise and, where possible, personalised medicine.



HIGHLIGHTS

Towards precision medicine based on functional genetics in monogenic obesity
Amélie Bonnefond's team has made a major breakthrough in the treatment of monogenic obesity. The researchers published an article in *The Lancet Diabetes & Endocrinology* on their large-scale functional genomics study targeting a specific population of obese patients with pathogenic mutations in the PCSK1 (prohormone convertase 1) gene. The study shows that only mutations with a total loss of function of the protein lead to a monogenic form of obesity. Patients with this type of mutation could be treated with setmelanotide, a drug used to control hunger. This study demonstrates the importance of functional genetics in precision medicine.

BUT ALSO…

Horizon Europe OBELISK project awarded
(directed by Amélie Bonnefond and Philippe Froguel) dedicated to preventing obesity in children.

The research team:

FIND OUT MORE

TRANSLATIONAL RESEARCH ON DIABETES

RTD U1190 Inserm / University of Lille / Lille University Hospital / Institut Pasteur de Lille - Prof. François Pattou

This laboratory, headed by Professor François Pattou, employs over 40 people, including researchers, clinical researchers, lecturers, PhD and post-doctoral students, engineers and technicians. Together with the units led by Philippe Froguel and Bart Staels, it forms the European Genomics Institute for Diabetes (EGID) research federation. The research team is located on the Lille University Hospital campus, in the Faculty of Medicine Research Unit, and includes a Biotherapy Platform for the production of human islets, an animal facility (rodents and mini-pigs) and the DiabInnov platform (industry-university platform). Clinical studies are conducted at the Huriez Hospital, adjacent to the laboratory. The research unit focuses on translational research into diabetes, and in particular, into human islets of Langerhans transplantation (type 1 diabetes) and metabolic surgery (type 2 diabetes). At the same time, more fundamental research in these areas is being developed.

HIGHLIGHTS

Predicting long-term weight loss after bariatric surgery

Bariatric surgery enables obese individuals to lose weight. Little is known about its long-term impact. François Pattou's team in Lille has developed a digital medical device that predicts weight loss in surgical patients over a 5-year period. This prediction is based on an artificial intelligence model developed from a cohort of 1,500 patients operated on and monitored for over fifteen years at the Lille teaching hospital. The model's performance was then validated in over 10,000 patients monitored in France and abroad as part of the European Sophia project.

CANCERS

Canther UMR9020 CNRS / U1277 Inserm / Institut Pasteur de Lille
Dr Isabelle Van Seuningen

The CANTHER Joint Research Unit carries out cancer research - Heterogeneity, Plasticity and Resistance to Cancer Therapies (CNRS - Inserm - University of Lille - Institut Pasteur de Lille - Lille University Hospital) (www.canther.fr) within the Lille ONCOLille Interdisciplinary Cancer Research Institute (www.oncolille.eu), with the support of the Institut Pasteur de Lille. This unit, headed by Dr Isabelle Van Seuningen, aims primarily to gain a better understanding of the molecular and cellular mechanisms of resistance to treatments and to identify new markers and new therapeutic targets to overcome this resistance. CANTHER is also interested in tumour dormancy and residual disease, two phenomena at the root of recurrence and relapse following treatment. Thanks to its multi-disciplinary teams, including clinicians, the unit develops fundamental research through to pre-clinical and clinical research. The ultimate aim of CANTHER's research is to propose new therapeutic approaches for better care, improved follow-up and increased survival for cancer patients.

Since the discovery of the first cancer genes, the oncogenes, in Lille, researchers have been trying to identify the molecular and cellular mechanisms by which a normal cell becomes a tumour, resists and evades treatment and sometimes becomes metastatic while taking into account the tumour microenvironment.

Two teams within CANTHER are currently accredited by the Institut Pasteur de Lille. The SenFib *"Senescence, fibrosis and cancer"* team, led by Prof. Corinne Abbadie, is studying the cellular mechanisms associated with two cellular ageing processes: senescence and fibrosis. These processes are triggered by the cancer cell following anti-cancer treatments and can lead to the development of a second cancer. The aim is to find new therapeutic targets associated with these mechanisms. The Target team *"Efficacy and resistance to targeted anti-tumour therapies"*, led by Dr David Tulasne, is working on lung and prostate cancers with a poor prognosis. Specifically, the researchers are studying mutations linked to the MET receptor and their impact on the tumour cell's ability to resist targeted therapies. Here too, the idea is to find new therapeutic approaches and new treatments to overcome this resistance.

Les équipes de recherche :

E2 : EQUIPE TARGET EFFICACITÉ ET RÉSISTANCE AUX THÉRAPIES CIBLÉES ANTI-TUMORALES
David Tulasne

E4 : EQUIPE SENFIB : SÉNESCENCE, FIBROSE ET CANCER
Corinne Abbadie

FIND OUT MORE

HIGHLIGHTS

The SenFib team, led by Professor Corinne Abbadie, is interested in the secondary effects of anti-cancer treatments, in particular, two forms of cellular ageing, senescence and fibrosis. 2023 saw the completion of two flagship projects. The first concerns cisplatin, a widely used chemotherapy, with the international extension of a patent relating to its nephrotoxicity (PCT/EP2023/055801) and the publication of a study showing that targeting the miR-92a-3p microRNA could overcome resistance to this treatment.

BUT ALSO...

The national LABREXCMP24 label of the PIA3 "Research networks on cancers with a poor prognosis" by the National Cancer Institute on lung cancers for its participation in the COALA "Cure Oncogen-Addicted Lung Adeno-carcinoma" was awarded to the Target team with Prof. Alexis Cortot.

It is demonstrated that a mutated form of the MET receptor, responsible for cases of non-small cell lung cancer, still requires activation by its ligand HGF.

Platforms supported by the Institut Pasteur de Lille

BICEL: BIOIMAGING CENTER LILLE, CELL IMAGING AND CYTOMETRY PLATFORM
Frank Lafont

ARIADNE-CRIBLAGE, A HIGH-CONTENT, HIGH-THROUGHPUT SCREENING PLATFORM
Florence Leroux

P3M: PROTEOMICS AND MODIFIED PROTEIN ANALYSIS PLATFORM
Jean-Michel Saliou

PLEHTA: PLATEFORME D'EXPÉRIMENTATION ET DE HAUTE TECHNOLOGIE ANIMALE (ANIMAL EXPERIMENTATION AND HIGH TECHNOLOGY PLATFORM)
David Hannebique

BILILLE: BIOINFORMATICS, BIOANALYSIS AND BIOSTATISTICS
Guillemette Marot

TAG: TRANSCRIPTOMICS AND APPLIED GENOMICS PLATFORM
David Hot

SINBIOS - IT SUPPORT PLATFORM FOR BIOLOGY AND HEALTH
Karl Oulmi

Other platforms:

ARIADNE – ADME
Florence Leroux

NMR - NUCLEAR MAGNETIC RESONANCE
Isabelle Landrieu

LIGAN MP - GENOMICS AND METABOLIC DISEASES
Philippe Froguel

CRB - BIOLOGICAL RESOURCES CENTRE
Philippe Amouyel
Amandine Flaig

PEPTIDE CHEMISTRY
Oleg Melnyk

FIND OUT MORE

TECHNOLOGICAL PLATFORMS

PLBS (UMS 2014 CNRS - US 41 Inserm) - Sophie Crespin

The technology platforms enable our teams to develop innovative therapeutic approaches and drive forward high-level research.

Dedicated to academic research in Lille and the 36 teams supported by the Institut Pasteur de Lille, they are also open to the entire scientific community, including biotechnology companies and those specialising in pharmaceutical research.
To provide researchers with the best possible support, the Institut Pasteur de Lille provides technological platforms combining exceptional instruments, dedicated staff and specific expertise.

At the heart of this public-private ecosystem, the technological platforms reflect the Institut Pasteur de Lille's strong commitment to excellence in research, which every day enables everyone to live in good health.

HIGHLIGHTS

After an initial investment in a new confocal microscope in 2022 on the Health campus, the Lille biology and health platforms (PLBS - UAR CNRS 2014 - US Inserm 41) have once again received support from CPER Resist-omics to the tune of €1.5 million.

The **Lille BioImaging Center** has thus acquired two spectral cytometers, one of which will be installed on the Pasteur Campus in Lille in early 2024. This equipment can be used to separate cells and isolate cell populations of interest.

More information on spectral cytometry:

The **ARIADNE high-content screening platform** was also able to programme the refurbishment of the acoustic nano distributor, an essential piece of equipment for organising candidate drug screening campaigns.

More information

In addition to its unfailing support for the laboratories' research activities, illustrated by a number of scientific publications, **BICeL** has also distinguished itself by winning the "la preuve par l'image" competition.

More information

BUT ALSO…

2023 was marked by the renewal of the collaboration agreement between **Transcriptomics platform and applied Genomic and Genes diffusion**. This collaboration of more than 20 years also led, in 2023, to the defence of a doctoral thesis entitled *"In a context of global health: the contribution of molecular technologies in an animal semen production/selection model"*.

In 2023, the **P3M proteomics platform** continued the promising development of Thermal Proteom Profiling with several Lille-based teams and biotech companies. In partnership with the PAGés platform, it also completed its first original glycoproteomic study with an industrial customer.

13 **LILLE** PLATFORMS FOR BIOLOGY AND HEALTH (PLBS)

95 **ENGINEERS** AND **TECHNICIANS**

40 **EXPERTS**

Coastal plants in the Hauts-de-France region are a potential source of active substances for treating coronavirus infections

Karin Séron (left) and Sandrine Belouzard

The search for drugs to combat viral infections can reveal some surprises. **Doctor Karin Séron** and her team from the Lille Centre for Infection and Immunity (CNRS UMR9017, Inserm U1019, Univ Lille, IPL) and her colleagues from the BioEcoAgro laboratory (Lille Faculty of Pharmacy) have studied the antiviral properties of plants harvested from the coastline of the Hauts-de-France region. These plants, known as halophytes, are adapted to salty environments. Among the plants tested, sea buckthorn stood out for its effect against coronaviruses *in vitro*. The researchers purified and identified the compounds in sea buckthorn extract responsible for the antiviral activity: triterpenes. These natural molecules are active not only against the SARS-CoV-2 virus responsible for COVID-19 but also against another coronavirus responsible for mild colds. Experiments are underway to determine whether these natural molecules can serve as the starting point for new treatments against coronaviruses.

Hepatic steatosis: identification of a new therapeutic target

Hepatic steatosis (accumulation of fat in the liver) associated with metabolic dysfunction affects 25% of the general population and 80% of obese and diabetic people. People suffering from hepatic steatosis have a high risk of developing cirrhosis and of dying from liver cancer or cardiovascular complications, making this disease a major public health problem. No effective pharmacological treatment is available at present. The team led by **Prof. Réjane Paumelle** et **Prof. Bart Staels** (Inserm UMR1011, EGID, Univ Lille, University Hospital Lille, IPL) is looking for potential therapeutic targets. By comparing the transcriptome of obese patients developing fatty liver, the researchers have identified a new candidate codenamed FAT10. This acts as a negative regulator of the metabolic activity of a well-known nuclear receptor that the team has identified: PPAR alpha. This work represents a breakthrough in our understanding of this disease and in the future development of new drugs.

Bart Staels

Research into bone marrow at the Institut Pasteur Lille opens up new leads on HIV

Fernando Real and Cyrine Bentaleb

Forty years after the discovery of the virus responsible for AIDS, an estimated 39 million people worldwide are living with HIV. While antiretroviral treatment is currently the best therapeutic alternative, long-term complications can occur, and above all, antivirals do not eradicate the virus from all the body's reservoirs, which is necessary for recovery. The "Chronicity of Viral Infections" team at the Institut Pasteur in Lille, led by **Dr Fernando REAL** is investigating the molecular and cellular mechanisms involved in the persistence of pathogens in myeloid cells by focusing on the bone marrow.
This highly promising research could open up new therapeutic avenues for treating persistent HIV infection.
The team, set up at the end of 2022, has received funding from the CNRS, the Hauts-de-France region and SIDACTION.

Discovery of a new gene involved in prostate cancer

Prostate cancer is mainly treated with anti-androgen therapies. However, resistance to treatment quickly develops. One of the resistant forms of the disease has a neuroendocrine phenotype and progresses aggressively and rapidly without effective therapies. The CANTHER team, led by **Dr Martine Duterque** (CNRS, Inserm, University of Lille, Lille University Hospital, Institut Pasteur de Lille), has identified a gene, Fascine-1, specifically expressed in neuroendocrine prostate cancers. The Fascin-1 protein plays a crucial role in the cytoskeleton in the formation of cellular structures that enable cell mobility. In neuroendocrine prostate cancers, Fascin-1 is essential for cancer cell migration, invasion of healthy tissue and the formation of metastases. Its expression, specifically detected in neuroendocrine forms of prostate cancer, makes Fascin-1 a major player in the emergence of neuroendocrine phenotypes and a promising therapeutic target.

Pertussis vaccine: a major breakthrough by researchers in Lille

Pertussis is an infectious respiratory disease caused by the bacterium *Bordetella pertussis*. Highly contagious, it can cause fatal complications in infants. While current vaccines protect against the development of the disease in adults, they do not prevent transmission of the bacterium between individuals. The team led by **Dr Camille Locht and Dr Nathalie Mielcarek** at the Lille Centre for Infection and Immunity (Inserm U1019-CNRS UMR9017-Univ Lille University HospitalLille) has been working for many years to improve the effectiveness of the vaccine. The team has proposed a new nasal pertussis vaccine, code-named BPZE1, which has proved effective in preclinical models and non-toxic in phase 1 clinical trials. As part of a vast international academic and private-sector collaboration, researchers are conducting a phase 2 clinical trial to demonstrate the efficacy and safety of this new pertussis vaccine in adults. This work, published in the prestigious journal The Lancet, represents a major advance in the field.

Bacterial pneumonia: towards new therapeutic perspectives

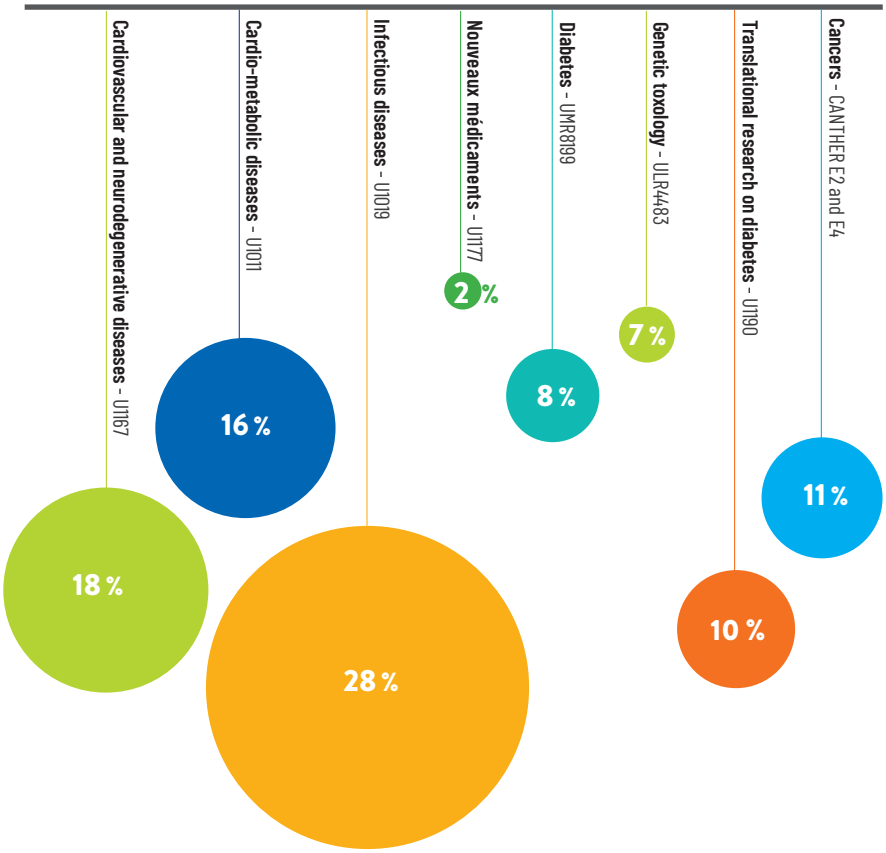
Bacterial pneumonia is a major public health problem. In a recent article published in the journal Nature Communications, the team led by **Dr Philippe Gosset** and **Rodrigue Dessein** from the Lille Centre for Infection and Immunity has identified one of the mechanisms leading to bacterial pneumonia. Researchers have shown that the colonisation of the intestines by certain bacterial germs that are multi-resistant to antibiotics, a frequent occurrence in hospitals, causes a functional imbalance in the intestinal flora. This flora is well known for its health benefits. The reduced production of short-chain fatty acids, which are naturally beneficial to the immune system, is responsible for this effect. This work opens up new therapeutic prospects in the fight against respiratory bacterial infections.

Read all the latest news
on our website **www.pasteur-lille.fr**

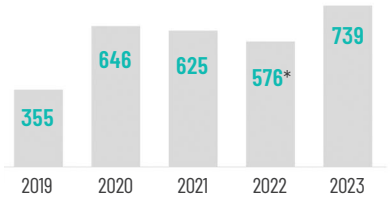
SCIENTIFIC PUBLICATIONS 2023

Publications in international journals such as Nature, Nature Genetics, the Lancet, PLoS One, PLoS Medicine, Gut, and the New England Journal of Medicine.... reflect the excellence of our research. Bibliometrics, including a quantitative evaluation of impact factors in prestigious journals, reflects the scientific community's interest in the discoveries that are reported and cited in this way. Bibliometrics evaluates research activity by applying statistical methods to scientific publications (bibliography of articles, signatures of articles, keywords and authors, etc.). It is used to measure the scientific output and reputation of a researcher, a laboratory, an institution, a country or an area of research.

739 scientific publications* in 2023



CHANGE IN THE NUMBER OF PUBLICATIONS

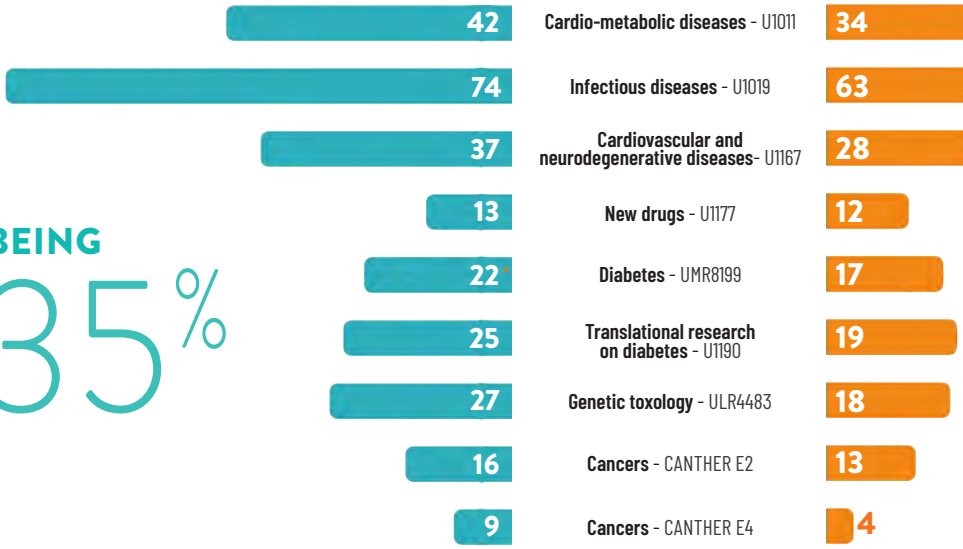


* Impact of the COVID-19 period

LEADERSHIP BY UNIT

(1st, 2nd and final author)

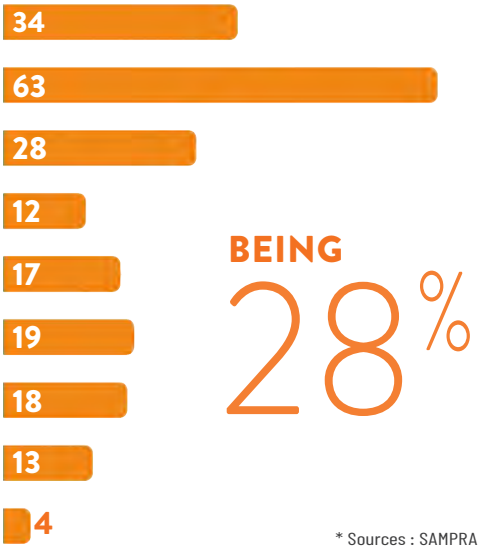
BEING 35%



NUMBER OF PUBLICATIONS A-B-C LEVEL + LEADERSHIP IN THE MOST PRESTIGIOUS JOURNALS

(1st, 2nd and final author)

BEING 28%



* Sources : SAMPRA

The partners

Université de Lille · cnrs · Inserm · CHU Lille · Inria · Université Catholique de Lille · Oscar Lambret

MICROBIOLOGICAL SAFETY UNIT

Institut Pasteur de Lille - Michèle Vialette

One of the keys to preventing infections in humans is controlling our environment. Many micro-organisms, whether viruses, bacteria or fungi, are transmitted by air, water or contaminated surfaces. This control is, of course, crucial in places where the public is particularly susceptible, such as hospitals or childcare facilities, but it is also essential in places where there is a high concentration of people, such as public transport.

Awareness of the importance of these issues has grown in recent years, not only in the public mind but also in that of industry, particularly in the light of the pandemic. Means of control include devices as varied as disinfectants, air purifiers, portable ionisers, active light systems, antimicrobial textiles and functionalised surfaces. It is, therefore, particularly important that the development and assessment of these devices are rigorous and reliable to ensure optimum protection and public confidence.

This is the background to the work of the Microbiological Safety Unit (USM), an applied research laboratory at the Institut Pasteur in Lille, set up in 2003 by Dr Michèle Vialette. With a staff of five, this department has a range of laboratories dedicated to each type of micro-organism: bacteria, viruses and fungi. These laboratories use state-of-the-art equipment to study the behaviour of pathogenic micro-organisms under controlled conditions that reproduce real-life conditions as closely as possible.

The USM's expertise comes into play both in the prototype design phases and in the final assessment of systems for controlling environmental

pathogens. In addition to manufacturers, from major groups to start-ups, USM's contacts also include hospitals and public authorities in the human health sector.

FIND OUT MORE

GENETIC TOXICOLOGY LABORATORY

Institut Pasteur de Lille - Sophie Simar

The Genetic Toxicology Laboratory has been in existence for over 40 years and is one of the largest genotoxicity centres in France.

Its role is to carry out studies, in accordance with international guidelines, to assess the genotoxic and mutagenic potential of chemical, pharmaceutical, cosmetic, biotechnological and agrochemical substances in compliance with GLP (Good Laboratory Practice) standards. The laboratory is inspected by ANSM, Cofrac and ANSES.

R&D activities help to strengthen the link between expertise and research.

The laboratory is also part of the ULR 4483-IMPECS (IMPact de l''Environnement Chimique sur la Santé - Impact of the Chemical Environment on Health) research unit at the University of Lille. As genetic toxicology is a cross-disciplinary science, the laboratory is continuing to invest in environmental health by studying emerging pollutants and/or new health concerns, particularly in the field of airborne contaminants.

HIGHLIGHTS

Finalisation of the FREEDOM project on mixtures of endocrine disruptors in food. The FREEDOM project (2019-2023), co-ordinated by Dr. Hélène Moche - Toxicology Laboratory - has identified mixtures of known or suspected endocrine disruptors associated with each of the main diets in France, defined according to data from national studies of food consumption and contamination. These mixtures, made up of pesticides, heavy metals, phytoestrogens, mycotoxins, polycyclic aromatic hydrocarbons (PAHs) and/or brominated flame retardants, in proportions representative of the exposure associated with the different diets, were then assessed using a battery of in vitro tests investigating (anti-)oestrogenic, (anti-)androgenic, (anti-)thyroid or steroidogenic activity. For most of the effects observed, it was possible to identify one or more major contributors among the constituents of the mixtures. The project results were published for the first time in Environment International.

FIND OUT MORE

THE CENTRE FOR **PREVENTION, HEALTH AND LONGEVITY**

FIND OUT MORE

About us

The Prevention, Health and Longevity Centre embodies the Institut Pasteur de Lille's preventive and public health mission. Our multidisciplinary team of more than 80 professionals throughout the Hauts-de-France region is dedicated to supporting you in your healthcare journey, enabling you to take control of your well-being and helping you to live better for longer.

Promouvoir la prévention santé

We work with institutions and public authorities, businesses, healthcare professionnals and the general public to develop a **global vision of health and well-being.**

PUBLIC HEALTH
IMPROVING HEALTH FOR ALL

Health check-ups and personalised care

HEALTH CHECK-UPS
Lille, Artois, Tourcoing

› 11,739

COMBATTING ADDICTION
Smoking cessation interviews

› 84 Opération « Smoke-free month»

› 92 Kits delivered

ROUTE TO LONGEVITY
Expérimentation for carers

› 15 routes to longevity

Funded by CPAM Lille-Douai and Roubaix-Tourcoing

Training

> 235

> 19 training sessions

Launch of the 1st micro-nutrition e-learning course
in partnership with Santé Académie

Vaccinations and travel medicine

VACCINES
including 2,600 for influenza

> + over 14,000

ADVICE TO TRAVELLERS

> + over 9,000

Health education

> 19
funders

> + over 30
skills deployed

> for + over 22
customers supported (companies, local missions, associations, etc.)

Health in the workplace

COLLABORATION WITH ASSOCIATION BÉTHANIE

2023 : renewal of the partnership initiated in 2022.

Preventive healthcare workshops for employees as part of the quality of life and working conditions:

> 5 workshops

> 2 hrs per workshop

> 8 to 12 participants / workshop

Speakers: Sports medicine instructor, relaxation therapist or psychologist

8.3 M€

BUDGET ALLOCATED IN 2023 FOR PREVENTON

Programme «BONUS SANTÉ 2023»

financed by the Conseil Régional des Hauts-de-France

Prevention in nutrition and physical activity to improve the health of vulnerable populations in Hauts-de-France

9 territories | **20** people reached in each territory | **50** beneficiaries per territory referred for a preventive health examination

Research - Action

PROJECT SAFE started in 2023, to be completed in 2025/2026:
Women's cardiovascular health / co-funded by Institut Pasteur de Lille/ Lactalis

Population: 50 women at cardiovascular risk

Objective: Improving quality of life, understanding nutritional behaviour, assessing emotional levels and metabolic parameters

RECRUITMENT COMPLETED FOR THE PRÉVENDIAB STUDY: OVER 2,000 VOLUNTEERS INCLUDED

Conducted as part of the PréciDIAB research programme, the PrévenDIAB study aims to assess the risk factors (clinical, biological, social and behavioural) for diabetes and pre-diabetes according to the socio-economic profile of the 2014 participants, 33.7% of whom were living in precarious conditions. The data will now be analysed for more than 1,000 patients, and the 3-year cohort follow-up will start in 2025.

HEALTH AT WORK
THE COMPANY, A NEW AREA FOR PREVENTIVE HEALTH

Health at work programmes

COMPANIES SUPPORTED IN **flu vaccination**

> 87

HEALTH CHECK-UPS

> 275

EXPATRIATION CHECK-UPS

> 176

ROUTE TO LONGEVITY

> 43

Parcours LONGÉVITÉ® DE L'INSTITUT PASTEUR DE LILLE

PÔLE SANTÉ TRAVAIL Métropole Nord

SIGNING THE PÔLE SANTÉ TRAVAIL AGREEMENT AND INFORMATION WEBINAR

for occupational health physicians.

Preventive health training for healthcare professionals and companies

THEY TRUST US

Lesaffre
EPSM St-Venant
Conseil Général
ASRL Lille le Colibi
CLAT du Conseil Départemental
Conseil Général du Pas-de-Calais,...

5 NEW OCCUPATIONAL HEALTH TRAINING COURSES

- Sleep
- Addictive behaviours
- Mental health
- Food
- Physical activity

FIND OUT MORE

EVENTS
MOBILISING AND RAISING AWARENESS

SPRING FOR PREVENTION

First edition on the theme **"Preventive healthcare for all ages"**, with a pre-spring event at the citadel in Lille

INNOVATION & PREVENTION PRIZE

6th edition in collaboration with **Eurasanté**

COMPANY ABSENTEEISM BAROMETER

Collaboration with **Ayming**, introduction to **Route to Longevity** to promote employee well-being

INTERVENTION AT TAPE À L'OEIL

Conference on mental workload by Manon Lenain, Neuropsychologist, for around a hundred employees

PREVENTION & HEALTH CONFERENCE

11th edition in collaboration with the **Pileje Foundation**, highlighting effective local prevention programmes

NUTRITION INTERVIEWS

24th edition dedicated to healthcare professionals on children's **first 1,000 days**

All our news

PREVENTION

Thanks to our sponsors

Auchan RETAIL GROUPE LACTALIS

who support our prevention work

The Institut Pasteur de Lille's Prevention, Health and Longevity Centre continues to play a crucial role in promoting health and well-being within the region's community and businesses. In 2023, our public health initiatives, corporate programmes and events all contributed to our mission of prolonging life in good health. 2024 is already opening up promising new initiatives and collaborations.

ASSISTING AND SUPPORTING THE RESEARCH

MANAGING RESEARCH CONTRACTS

The Research Contract management department in the Research Administration Division helps laboratories to set up, manage, justify and close their public and private, regional, national, European and international funding.

In daily contact with the research units - managers, researchers, engineers, technicians - and the Institute's functional departments, the team ensures that it has the information it needs to manage research contracts effectively. This means we can support the development of projects under optimum conditions, in compliance with the regulations of the funding bodies and IPL procedures.
The department is also responsible for managing research contract accounts and cash flow, responding to the various surveys carried out by funding bodies, establishing and monitoring research indicators and working very actively with partner institutions (University of Lille, Inserm, CNRS, Lille University Hospital) to support laboratories in the day-to-day and future management of research activities at the highest international level.

Key figures for 2023

+ OVER **200**
ACTIVE ACCOUNTS IN 2023, INCLUDING **26** NEW

€6.3 M
OF EXPENDITURE MONITORED IN 2023

64
PROJECTS SUBMITTED IN 2023

145
JUSTIFICATIONS AND FINANCIAL POINTS ESTABLISHED IN 2023
More than **3,000** accounting items processed

LEGAL AND PROMOTION

PATENT APPLICATIONS IN 2023
14

PATENTS IN PORTFOLIO
58

The Institut Pasteur de Lille is strengthening its management of personal data. At the end of 2023, a worksite was launched to ensure compliance. Representatives have been appointed for each activity to ensure that the processing of data used within the IPL is clearly identified and organised in such a way as to respect the rights of the people whose data has been and is being collected.

In terms of promotion,, the permanent offices organised as part of the partnership with Inserm Transfert have made it possible to finance research projects with SNA Catriem funds and to register no fewer than 13 new patents in 2023.

The biotechs on our campus:

apteeus

BIOVERSYS

GenoScreen

Lifebloom
Steps for life

STARKAGE THERAPEUTICS

Pharma

THE PASTEUR CAMPUS IN LILLE, **FERTILE TERRITORY FOR INNOVATIVE BIOTECHS**

Biotechnology is revolutionising the healthcare sector. At the heart of the campus, the Institut Pasteur de Lille is supporting the development of biotechnology projects, start-ups and companies, as well as innovation in healthcare. A shared objective: to develop promising therapeutic treatments, new services and products for analysis and diagnosis as a direct result of the fundamental research carried out in Lille.

Genoscreen

offers a range of training courses in bioinformatics

GenoScreen offers a wide range of training courses in bioinformatics, from the acquisition of skills to the development of expertise. These standard and on-demand training courses for NGS data analysis offer practical solutions for quality control, genome assembly, annotation, BLAST searches and variant detection.

The Deeplex Myc-TB diagnostic kit recommended by the WHO

The Deeplex Myc-TB kit, dedicated to diagnosing antibiotic resistance in tuberculosis, has just been recommended by the WHO following an international evaluation led by FIND, the Global Diagnostic Alliance. This test, developed, produced and marketed by GenoScreen, has been evaluated as the best-performing test using targeted high-throughput sequencing.

Starkage Therapeutics

a pioneer in anti-senescence therapy in the treatment of cancer

A leading biotech company, it is dedicated to revolutionising cancer treatment by targeting senescent cells. Its innovative approach focuses on developing therapies that eliminate senescent cells induced by standard anti-cancer treatments, thereby improving overall treatment efficacy and patient outcomes. These senescent cells contribute to tumour relapse, resistance to treatment and poor prognosis.

StarkAge Therapeutics has developed a proprietary platform to identify and target specific biomarkers of cancer cell senescence. The flagship programme, STX-1, uses antibody-drug conjugates (ADCs) to target and eliminate these cells. A fund-raising round expected in 2024 will enable the company to finalise in vivo trials of its first drug candidate, STX-1, targeting the transmembrane protein DPP4 (CD26), which is highly overexpressed by senescent cells. The in vitro and in vivo results already obtained, particularly in liver and prostate cancer models, are extremely promising and applicable to a wide variety of other types of cancer expressing the target.

More information: **starkagetx.com**

CAMPUS 2026:
THE CAMPUS-WIDE PROJECT CONTINUES

Every day, the Institut Pasteur de Lille welcomes more than 800 employees to its campus: Pasteurians, staff from the CNRS, Inserm, the University of Lille and the Lille University Hospital, prevention professionals and employees of tenant companies from the world of research and innovation.

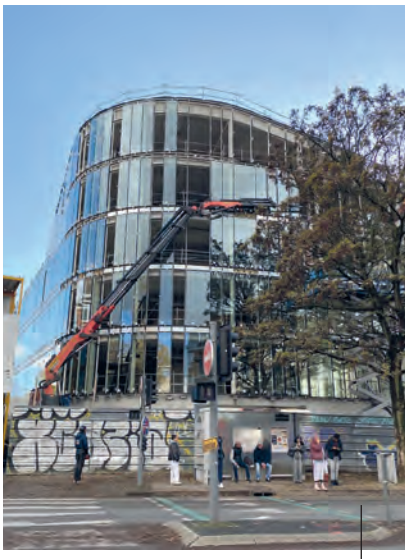
Since 2016, the Pasteur Campus in Lille has been undergoing a complete transformation to become more attractive, more responsible and more sustainable.

Between now and 2026, le the building project will involve the refurbishment of old buildings, offices and laboratories, as well as the development and marketing of a new rental property programme.

2023 has made significant progress, with the buildings on the corner of boulevard Louis XIV and Maréchal Vaillant due to open in the first half of 2024, as well as the

"Le 1894" events building and the Guérin research building due to be handed over in the summer of 2024.

"Le 1894" events building View of the Rooftop under construction (July 2023)



Le 24 boulevard Louis XIV

Bâtiment Guérin

3246 m² of biology and chemistry laboratories will become home in 2024 to the RIDAGE unit (risk factors and molecular determinants of age-related diseases) and the M2SV unit (Medicines and Molecules for Action on Living Systems).

800
STAFF
WELCOMED EVERY DAY ON THE PASTEUR CAMPUS IN LILLE

50,000 M²
IN AREA
INCLUDING **10,400 M²** UNDERGOING IMPROVEMENTS

60 €M
TOTAL COST
OF THE BUILDING PROJECT

PROJET JARDIN: INITIATED IN 2023

Built on a block of over two hectares, the Institut Pasteur campus in Lille has evolved considerably over its 130-year history. Over the last few years, it has undergone a period of radical restructuring. Building by building, extensive renovation and reconstruction work has been undertaken to meet the functional and technical requirements of the fundamental research teams, its prevention centre and the needs of other users: administrative staff, patients, start-ups, etc.

In 2023, we launched a landscape study to rethink the entire campus exterior. Drawing on the architectural and landscaping potential of the site and the needs of users, this project focuses on three main areas:

Revealing ecological potential

Our approach is based particularly on the existing planting, while greatly increasing the proportion of planted areas and significantly reducing the amount of impermeable ground. The maximum amount of natural soil will allow rainwater to infiltrate and the natural water cycle to operate. This part of the project aims to adapt our campus to climate change and encourage biodiversity.

Restoring unity to the landscape

A complete planting scheme will unify the landscape of the Campus, give it an identity, and offer attractions throughout the seasons. Existing trees with a strong landscape presence will serve as the basis for the future composition.

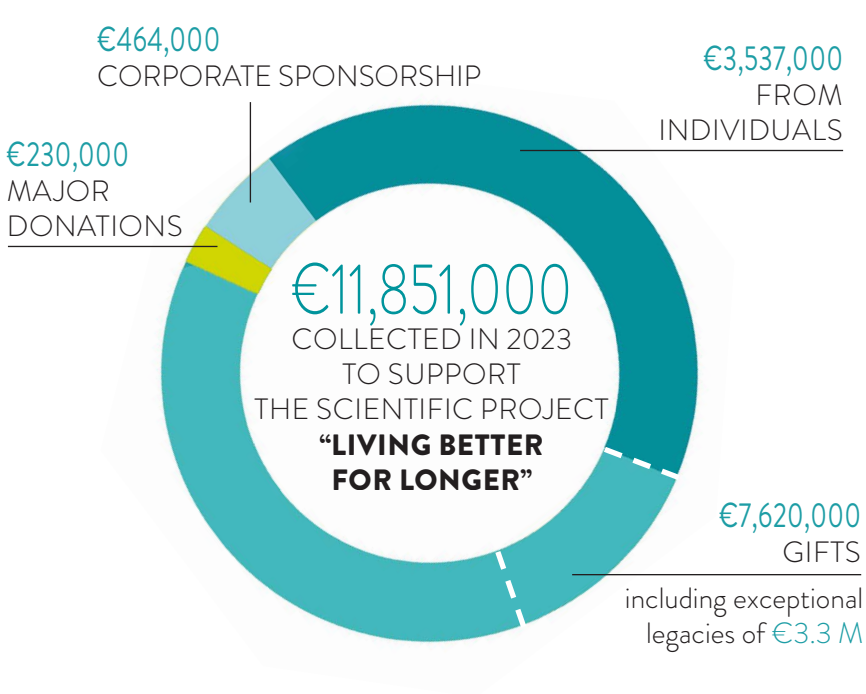
Adapting facilities to contemporary uses

The collective workshops held with campus staff highlighted the current need to make these outdoor spaces a place to live and gather. A traffic study is underway to move towards “zero cars” on campus. An additional secure bicycle storage area will be created to encourage this soft mobility as much as possible.

THIS PROJECT WILL CONTRIBUTE TO THE WELL-BEING OF THE PEOPLE WORKING ON THE CAMPUS AND ENHANCE ITS INTERNATIONAL APPEAL.

PHILANTHROPY

FUNDRAISING TO SUPPORT RESEARCH



11
COMPANIES
have supported us

54,500
ACTIVE DONORS

20
BEQUESTS AND LIFE INSURANCE taken out during the year

Institut Pasteur de Lille
Vivre mieux plus longtemps
LES AMIS DE LA FONDATION

THE INSTITUT PASTEUR DE LILLE'S SPONSORS AND MAJOR DONORS NETWORK CLUB

OUR REGULAR SPONSORS

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Joined in 2023 by:

PAUL
Kereis

THEY STOOD BY US IN 2023

AUSSPAR
Cofidis
chronodrive
Disney Publishing Worldwide
JUNIA Grande école d'ingénieurs

Franck Thilliez
A SPONSOR WITH UNWAVERING SUPPORT

To mark Giving Tuesday France 2023, the Institut Pasteur in Lille is running a unique fundraising campaign with the support of its patron, author Franck Thilliez. For any donation of 150 euros or more, donors received a signed copy of the bestselling author's latest book, **"La Faille". The Institut Pasteur de Lille raised over 45,000 euros thanks to this initiative!**

MEETING OUR DONORS

In keeping with its mission to pass on knowledge and to thank its donors for their loyalty and support, in 2023, the Institut Pasteur de Lille offered a wide range of opportunities to meet the Foundation's researchers and experts.

30 PODCASTS

A short format to develop your knowledge on themes as diverse as deep-sea research, prevention of women's cancers and our latest Terre de Chercheurs campaign.
To listen or listen again:
https://podcast.ausha.co/la-vie-institut-pasteur-de-lille

WEBINARS

We launched a new format in 2023 for our most connected supporters. Watch the webinar **"How can I reduce my tax bill by making a donation? "** in partnership with Maître Florence Graux, notary in Lille:
https://www.youtube.com/watch?v=V6Sa-9jdutQ

CONFERENCES

For those who prefer human contact, we offer the chance to meet our researchers in the flesh at our **"Envie de savoir(s)"** (Want to know more?) conferences

21 September 2023
"Alzheimer's: are we predisposed to it?" led by Dr Julien Chapuis

08 November 2023
Special anniversary conference at Lille Grand Palais ***"Researchers are taking on new challenges for our health"***

SUPPORT US

The Institut Pasteur de Lille is a public foundation. Financially independent, grants account for only 25% of the resources dedicated to research. This is why YOUR DONATIONS ARE SO IMPORTANT. Every one of them is helping to advance research to fight disease for you and your loved ones.
Find out all about taxation and how to support us:
https://pasteur-lille.fr/nous-soutenir/

THEY RALLIED ROUND US

A solidarity event is an original way of supporting us by mobilising your friends and family to collect funds around an initiative, an event or a challenge in aid of medical research.

19 September 2023 at the Lille Chamber of Commerce and Industry, the French Teqball Federation, in partnership with French Tech Lille, organised a gala dinner to showcase this new sporting discipline. An auction of unique sporting memorabilia was organised for the occasion in aid of a number of causes, including the Institut Pasteur de Lille.

6 March 2023, l'Institut Pasteur de Lille was at the Arena Stade Pierre Mauroy for the 3rd ambassadors' evening organised by Hello Lille. The objective? To launch the #**SansMoi LeDiabete** operation in fornt of the 1,200 ambassadors from the metropolitan area: 16 influencers from Lille raised awareness among the general public over a period of one month of simple diabetes prevention tips from the Institut Pasteur de Lille's Prevention, Health and Longevity Centre.

12 May 2023, the Aire-sur-la-Lys Lions Club, has once again got involved with its **"Tulipes contre le cancer"** campaign. The sale of flowers enabled the Lions Club to donate profits to three institutes specialising in cancer research and treatment, including the Pasteur Institute in Lille, to the tune of €6,500.

THANK YOU

CSR COMMITMENTS

The activities of the Institut Pasteur de Lille are part of our corporate social responsibility (CSR) approach. Initiated in 2017 and supported by General Management, this approach involves all campus employees in tangible actions on a daily basis and is broken down into three themes: social, societal and environmental.

> SOCIAL

To create human values on the campus

DEVELOPING EMPLOYABILITY

2 developments begun in 2022 were completed in 2023

TRAINING BUDGET

1,3% of the payroll in 2023, representing 155,000 + 1% training tax

PROFESSIONAL EQUALITY INDEX

88/100

(2022/2023 index published in 2024)

PERCENTAGE OF WORKERS WITH DISABILITIES

7.06 %

TRUST, AUTONOMY, COMMITMENT, RESPONSIBILITY: A HUMAN AND MANAGERIAL PROJECT TO SUPPORT THE TRANSFORMATION OF THE INSTITUT PASTEUR DE LILLE PASTEUR DE LILLE

Interview with Mélanie Lestoquoi, HR Manager

« The Institut Pasteur de Lille is evolving and changing, and this cannot be achieved without the Women and Men who make it up. This is leading to a change in the managerial and personal culture for all our employees. It is an essential prerequisite for the development of our Foundation and is based on two pillars:

> ***the employee**, a player in his or her own career and in the Institute's human project*

> ***the manager**, the leading HR player in developing employees, both in soft and professional skills.*

For example, as part of the IPL project, we are offering all employees and stakeholders of the Pasteur Campus in Lille (managers, non-managers, employees and non-employees of the Foundation) the opportunity to 'take action' by contributing their voice and their vision, in particular during collaborative workshops on a variety of topics such as remote working, the layout of the future premises of the Prevention Centre, and by integrating training courses dedicated to managers and non-managers... We also regularly invite them to events encouraging discussion, meetings and moments of cohesion, such as Horizon Campus, 'Les Pauses RH' (HR Breaks), business meetings, the managers' community, co-development, etc.

To enable employees to "take action", we act as a genuine guide, helping managers to develop their teams' independence confidently, so as to encourage a collaborative approach that is both empowering and engaging. »

IFR: 1.08
ISR: 0.05

DURING 2023:

> we have initiated discussions with our social partners on QWL - the Quality of Life and Working Conditions - to make it a key element of our CSR approach
> we have stepped up our efforts to combat psychosocial risks
> we are committed to combating musculoskeletal disorders with the CARSAT through the TMS Pro approach

> SOCIAL
Encouraging vocations

THE MUSEUM
AT THE INSTITUT PASTEUR DE LILLE

Inaugurated in 2017, the Institut Pasteur Museum in Lille reflects the history of the Institute and its founders, as well as the dynamic nature of the foundation today: numerous projects for the future, as well as new collaborations with the business world, as illustrated by the sponsorship of Anios Laboratories.

A new way of discovering history and science

Housed in Albert Calmette's former residence, it was here that Calmette and the veterinary surgeon Camille Guérin discovered Bacille Bilié de Calmette et Guérin (BCG), the tuberculosis vaccine whose original strains are on display in this museum. Louis Pasteur and Lille also tell the story of alcoholic fermentation, which the scientist discovered at the Lille Faculty of Science when he was Dean in 1854.

Part cabinet of curiosities, part period laboratory and part digital installation, the museum reveals the key moments in the history of the Institut Pasteur de Lille and its founders. This contemporary scenography provides an undeniable scientific outreach to suit all audiences.

A contemporary exhibition that resonates today in a place steeped in history...

PRACTICAL INFORMATION

18 Boulevard Louis XIV - 59000 Lille
Métro line 2 - Grand Palais
+33 (0)3 20 87 72 42
musee@pasteur-lille.fr

Public opening:
Saturday and Sunday (no booking required)

Guided tours for groups:
Monday to Friday (booking required)

Private use of the museum
for companies and associations...

The museum was created entirely thanks to sponsorship from ANIOS Laboratories.

KID CAMPUS: A UNIQUE IMMERSION IN THE WORLD OF RESEARCH

In 2023, Kid Campus offered 300 9 to 11-year-old children the opportunity to step into the shoes of a researcher for half a day through its workshops in the laboratories. A visit to the Institut Pasteur Museum in Lille also gave them the opportunity to discover the foundation's history and its major scientific discoveries.
In return for this immersion in the world of research, some schools have been able to organise collections and solidarity challenges to support researchers.

> ENVIRONMENTAL

2023 was a pivotal year, marking the end of a cycle of a safety and environmental risk prevention policy and the creation of a new multi-year programme.

To set an environmental course and provide a compass over a significant period, we have produced the first Carbon Footprint for the Institut Pasteur campus in Lille - data for 2022.

This assessment was carried out voluntarily and on the three possible scopes of this methodology, with the support of Greenly.earth.

2023 was also a landmark year for energy efficiency. Our daily efforts and the implementation of an energy sobriety plan have allowed us to reduce the site's energy consumption by 12%.

Working conditions

In 2023, only one work-related accident on campus resulted in time off work, confirming we control our risks effectively overall.

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Member of the board

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Government commissioner - Regional academic delegate for research and innovation for the Hauts-de-France region

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Benoit DÉPREZ	Director of Unit U1177
Jean DUBUISSON	Director of CIIL
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Jean-Charles LAMBERT	Future Director of Unit U1167
Frank LAFONT	Future Director of CIIL
Camille LOCHT	Director of Research Inserm
Nathalie MIELCAREK	Head of International Relations (invited member)
François PATTOU	Director of Unit U1190
Bart STAELS	Director of Unit U1011
Isabelle VAN SEUNINGEN	Director of Unit UMR9020/UMR1277

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L'INSTITUT PASTEUR DE LILLE

MANAGING DIRECTOR: **Prof. Frédéric Batteux** (in September 2024)

DEPUTY MANAGING DIRECTOR: **Didier Bonneau**

SCIENTIFIC

SCIENTIFIC ADVISERS

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Dr Camille Locht
Prof. Bart Staels

HEAD OF INTERNATIONAL RELATIONS

Dr Nathalie Mielcarek

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Lille Infection andImmunity Centre
Dr Jean Dubuisson

Risk factors and molecular determinants of diseases linked to ageing
Prof. Philippe Amouyel

Nuclear receptors, cardiovascular diseases and diabetes
Prof. Bart Staels

Metabolic functional (epi)genomics and molecular mechanisms involved in type 2 diabetes and associated diseases
Prof. Philippe Froguel

Translational research ondiabetes
Prof. François Pattou

Drugs and molecules to act on living systems
Prof. Benoît Déprez

CANTHER - Cancer Heterogeneity, Plasticity and Resistance to therapies
Dr Isabelle Van Seuningen

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Dr Sophie Simar

Microbiological Safety Unit
Dr Michèle Vialette

Clinical Microbiology Unit
— **Prof. Anne Goffard**
Prof. Patrice Nordmann

Integrative genomics and modelling of metabolic diseases

PLATFORMS PLBS - UAR 2014 US 41

PLBS support and research unit
Dr Sophie Crespin

— PLEHTA platform
David Hannebique

— Applied transcriptomics and genomics
Dr David Hot

— Cell imaging BiCeL EquipEx ImaginEx BioMed
Dr Frank Lafont

— Proteomics and modified peptides (P3M)
Dr Jean-Michel Saliou

— Bililie Platform EquipEx+ MuDiS4LS
Prof. Guillemette Marot

— ARIADNE Platform
Dr Florence Leroux

— SINBIOS Platform
Karl Oulmi

IPL PLATFORMS

High-Security Laboratory P3
Dr Florent Sebbane

Biological Resource Centre LAG - CRB
Amandine Flaig

LIGAN Genomics EquipEx LIGAN-MP
Prof. Philippe Froguel

HS ADME PK Screening
Prof. Benoît Déprez

RMN
Dr Isabelle Landrieu

Chemistry Systems Biology
Dr Oleg Melnyk

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Dr Sophie Lahousse

International vaccination centre
Dr Perrine Decaudin

Training centre
Dr Florence Lejeune

Health education centre
Eric Guiot

Prevention research centre
Coralie Berthier

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ADMINISTRATION AND FINANCE

Finance Division
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Mélanie Lestoquoi

IT
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Legal and research promotion
Florence Boulangé

Purchasing, Infrastructure and General Resources
Lucile Comble

Property
Virginie Drelon

Quality Safety Environment
Charles Quentin

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Director of communications and philanthropic development
Ghislain Fauquet

— Communication et transformation
Ghislain Fauquet

— Philanthropic development
Léa Dessaigne

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Director of research administration and contract management
Fabienne Jean

— Research administration
Sylvia Laforce

— Contract management
Ruddy Duthoit

PREVENTION, HEALTH AND LONGEVITY CENTRE

Administrative management of the Prevention, Health and Longevity Centre
Perrine Quivron

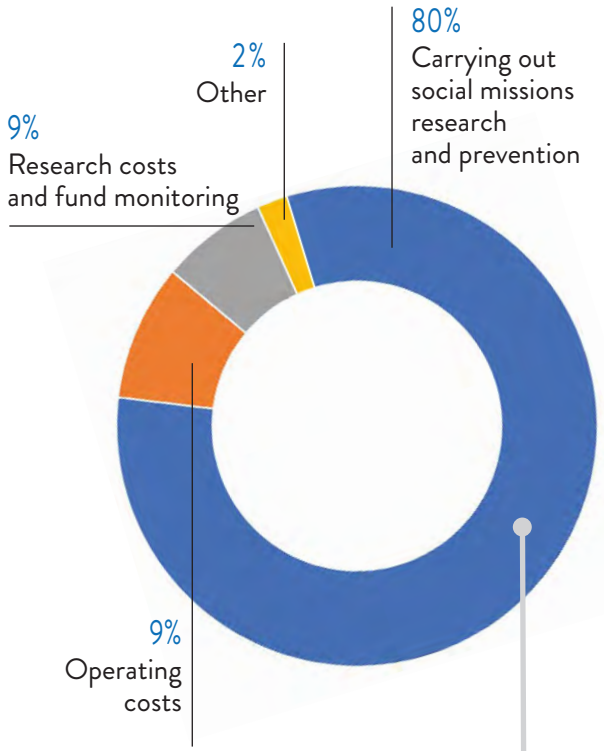
— Administrative and quality unit
Lauren Baudier

— Communications manager
Olivia Declunder

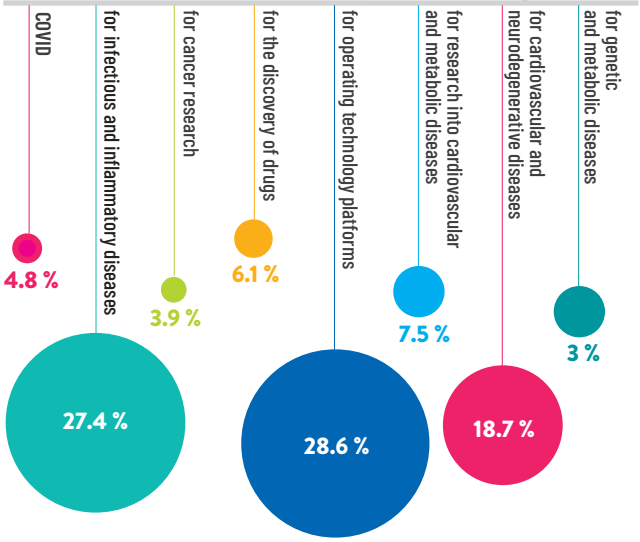
— Ecosystem development officer
Christophe Dusart

FINANCES

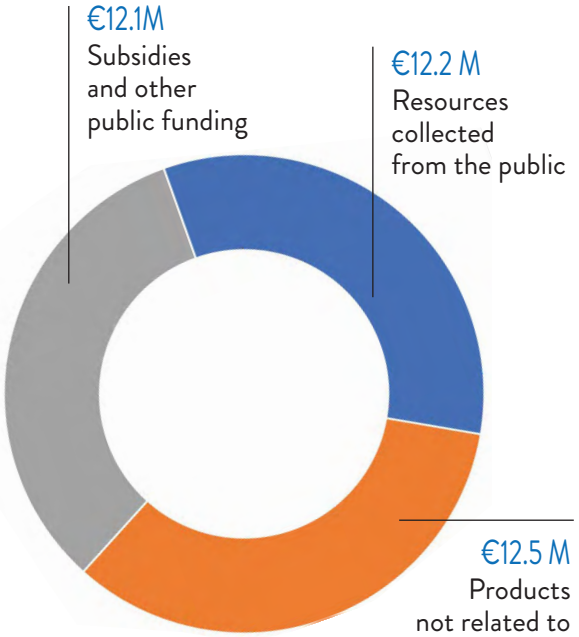
USES: €37.6 M



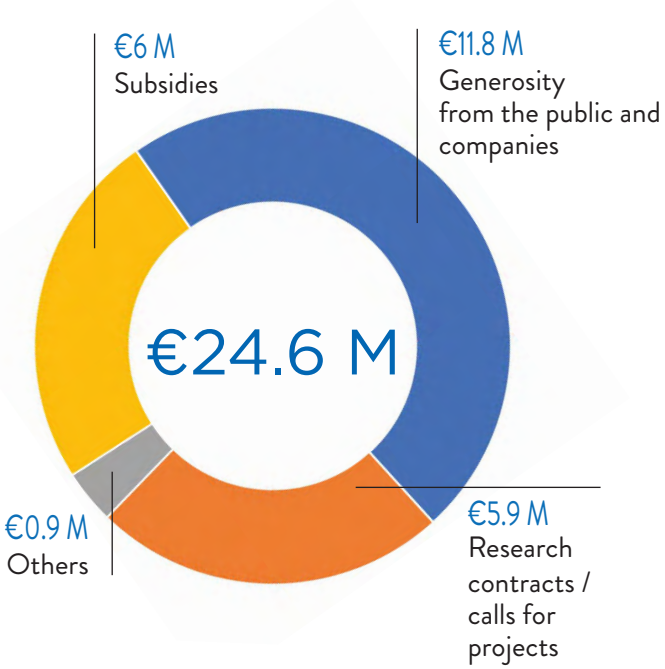
> ZOOM
Breakdown of direct support by research theme



RESOURCES: €36.7 M



> ZOOM
Distribution of research resources in 2023



Supporters

- DONATIONS
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- SOLIDARITY EVENTS
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SPEED UP RESEARCH AND TAKE ACTION FOR THE HEALTH OF TOMORROW

Every DONATION COUNTS!

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