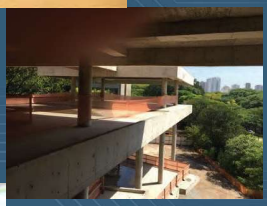
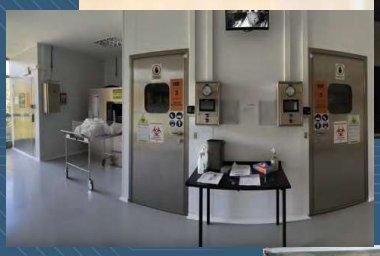
REPORT 2020 2026











INSTITUT PASTEUR
de São Paulo

REPORT

INSTITUT PASTEUR de São Paulo 2020 2026

A New Milestone in Scientific Cooperation between Brazil and France

In March 2023, the University of São Paulo (USP) and the Institut Pasteur celebrated a historic milestone: the evolution of the Pasteur-USP Scientific Platform (SPPU) into a full institute, autonomous and with its own legal personality – the Institut Pasteur de São Paulo (IPSP).
Jointly founded by USP and the Institut Pasteur, the IPSP was established as a private, non-profit, public-interest association, aligned with Brazilian legal frameworks. Located on the USP campus, the Institute consolidates an unprecedented alliance between two institutions of excellence, further strengthening the ties between Brazil and France in the field of science and global health.

With an area of 2,000 m², the IPSP occupies a modern building, erected in 2017, in the heart of the University City. Its laboratories fully reflect the institution's scientific strategy, expressed through innovation, cooperation, and social impact. Currently, 40 people make up the Institute, including students, technicians and principal investigators. In January and July 2024 respectively, two new G4 Emerging Research Groups were launched, co-funded by the Institut Pasteur and FAPESP.

One group, titled Eco-epidemiology, Diversity and Evolution of Emerging Viruses, is dedicated to studying viral diversity and understanding the mechanisms of emergence and evolution of new pathogens. The other group, titled Genomic Surveillance and Vaccine Innovation, aims to track new strains of the Influenza virus through wastewater analysis in the city of São Paulo, generating detailed epidemiological data that allows rapid identification of new strains, enabling quicker adaptation of vaccine formulations and the implementation of targeted immunization strategies for specific areas.

A new G4 group joined IPSP in November 2025, titled Therapeutics for combating multidrug-resistant pathogens. This research group investigates pathogen–host interactions to identify new therapeutic strategies against bacterial infections. Using high-throughput screening and automated microscopy, it targets host mechanisms involved in intracellular colonization and chronic or drug-resistant infections.

Two Young Reserchers' group, started also, respectively in 2025 and 2026. Viral spillover and One Health lab focuses on the surveillance and genetic evaluation of Influenza A virus circulation, in the OneHealth perspective, in key wild and domestic hosts, while the Urban Rodent Virology lab investigates viruses with zoonotic potential circulating in urban ecosystems, with a special focus on synanthropic rodents from the city of São Paulo.

From a scientific perspective, the IPSP then adopts the One Health strategy, which integrates human, animal, and environmental health into four priority axes:

1. Biodiversity, microbiome, and pathogen discovery
2. Vector-borne infectious diseases
3. Neurosciences
4. Translational medicine

Among the main research topics are the infectious processes of Zika, influenza, COVID-19, and trypanosomiases, as well as of multidrug-resistant bacteria; the impact of these infections on neurodevelopment and risks of neurodegeneration; the development of new diagnostic tests; and the design of innovative vaccines and/or chemotherapies.

The creation of the IPSP also represents the strengthening of the Institut Pasteur's presence in Latin America and the Caribbean. Until then, the region counted on four member institutes of the Pasteur Network – the Institut Pasteur of French Guiana, the Institut Pasteur of Guadeloupe, the Institut Pasteur of Montevideo – and its historic partner, Fiocruz. With IPSP's entry into the Pasteur Network in November 2023, this strategic network expands and renews itself, positioning Brazil as a central actor in health research.

Brazil, the world's epicenter of biodiversity and genetic diversity, with more than 214 million inhabitants, offers a unique setting for the study of infectious diseases. The integration of IPSP into São Paulo's ecosystem of excellence in health – comprising institutions such as the Instituto Butantan and USP's Institute of Biomedical Sciences – paves the way for high-impact scientific discoveries and innovative solutions to global public health challenges.

The Institut Pasteur de São Paulo is not just another research center: it is a symbol of a strategic partnership that unites tradition and innovation, science and society, Brazil and France, in pursuit of a healthier and more sustainable future.

Paola M. C. Minoprio
Executive Director Institut Pasteur de São Paulo

L'institut Pasteur de São Paulo, un partenariat d'excellence innovant dans le paysage de la coopération franco-brésilienne face aux enjeux de santé publique.

L'Institut Pasteur de Sao Paulo (IPSP) s'inscrit dans le droit fil de l'histoire de coopération scientifique et d'intimité intellectuelle entre la France et le Brésil. Inauguré au sein de l'Université de Sao Paulo en mars 2024 par le Président de la République Emmanuel Macron, l'Institut constitue un pilier fondamental du nouveau plan d'action du partenariat stratégique France-Brésil.

L'IPSP a vocation à répondre aux grands défis globaux et se trouve à la croisée de plusieurs missions stratégiques : lutte contre les maladies infectieuses émergentes, notamment liées au changement climatique, protection de la santé publique mais également de la biodiversité. Autant de sujets où son ancrage brésilien et son ouverture internationale constituent des atouts majeurs C'est à la fois un centre d'excellence en matière de recherche, un centre de formation pour les nouvelles générations de scientifiques et un partenaire privilégié des politiques publiques de santé. Il joue un rôle crucial dans la coopération scientifique internationale, en tissant des liens entre le Brésil, la France et le reste du monde au sein du réseau international des Instituts Pasteur.

Dès son lancement, en pleine pandémie de Covid-19, l'institut a démontré sa réactivité scientifique. Loin de ralentir ses activités, il s'est mobilisé sur l'étude du SARS-CoV-2 et a rapidement publié de nombreux articles, posant ainsi les bases de sa réputation scientifique et démontrant un engagement vital pour la société.

Aujourd'hui, l'IPSP dispose d'infrastructures de tout premier plan : 2000 m² de laboratoires, dont 16 hautement sécurisés et quatre de niveau P3, permettant la manipulation de pathogènes dangereux. Ces moyens de pointe s'appuient sur l'excellence des chercheurs, techniciens et étudiants qui composent déjà l'équipe.

L'Institut vise désormais à affirmer sa place dans l'écosystème brésilien, en consolidant et diversifiant ses financements et partenaires scientifiques. Le travail en réseau au sein du Pasteur Network est fondamental, afin de renforcer sa capacité à contribuer aux enjeux de santé globale. La formation et la mobilité des jeunes chercheurs au sein de ces réseaux, tant français que brésiliens, est également un enjeu très important qui permet de pérenniser à long terme les activités du centre. Il est aussi vital d'oser croiser ses recherches avec d'autres disciplines, comme l'intelligence artificielle ou la bio-informatique, pour rester à l'affut des dernières méthodes.

À l'heure où les crises sanitaires mondiales, de la pandémie de COVID-19 à l'émergence de nouveaux maladies liées au changement climatique, rappellent l'urgence de la vigilance sanitaire, l'Institut Pasteur de São Paulo joue un rôle déterminant. Sa localisation dans un pays abritant l'une des plus grandes réserves de biodiversité et confronté à de nombreux défis sanitaires, le place au premier rang de cette mission.

Alexandra Mias, Consule Général de France à São Paulo et membre du Conseil d'Administration de IPSP

The Pasteur Institute of São Paulo: an Innovative Center of Excellence in Franco-Brazilian Cooperation Addressing Public Health Challenges

The Pasteur Institute of São Paulo (IPSP) continues the long history of scientific cooperation and intellectual closeness between France and Brazil. Inaugurated at the University of São Paulo in March 2024 by President Emmanuel Macron, the Institute is a cornerstone of the new action plan for the France–Brazil strategic partnership.

The IPSP is designed to meet major global challenges and stands at the intersection of several strategic missions: combating emerging infectious diseases—particularly those linked to climate change—protecting public health, and safeguarding biodiversity. In all these areas, its Brazilian base and international outlook are major assets. It is at once a research center of excellence, a training hub for new generations of scientists, and a privileged partner in public health policy. It plays a crucial role in international scientific cooperation, forging links between Brazil, France, and the wider world within the international Pasteur Institute network.

From its launch—during the COVID-19 pandemic—the Institute demonstrated scientific responsiveness. Far from slowing its activities, it mobilized to study SARS-CoV-2 and quickly published numerous articles, laying the foundations of its scientific reputation and showing its vital commitment to society.

Today, the IPSP boasts cutting-edge infrastructure: 2,000 m² of laboratories, including 16 highly secure labs and four at P3 biosafety level, enabling work with dangerous pathogens. These advanced facilities are supported by the excellence of the researchers, technicians, and students already on the team.

The Institute now aims to strengthen its place within the Brazilian ecosystem by consolidating and diversifying its funding sources and scientific partners. Networking within the Pasteur Network is essential to enhance its ability to contribute to global health challenges. Training and mobility for young researchers within these French and Brazilian networks are also key to ensuring the center's long-term sustainability. It is equally vital to combine its research with other disciplines, such as artificial intelligence and bioinformatics, to stay at the forefront of new methods.

At a time when global health crises—from the COVID-19 pandemic to the emergence of new diseases linked to climate change—highlight the urgency of vigilance, the Pasteur Institute of São Paulo plays a decisive role. Its location in a country home to one of the largest reserves of biodiversity, while facing numerous public health challenges, places it at the forefront of this mission.

Alexandra Mias, Consul General of France in São Paulo and a member of the IPSP Board of Directors

THE HISTORY OF A FRANCO-BRAZILIAN VISION

A long tradition of academic cooperation between France and Brazil dates back to the friendship between Louis Pasteur and Emperor Pedro II.

The latter, eager to contribute to the humanitarian mission of his friend, was among the first benefactors of the Institut Pasteur. The arrival of Oswaldo Cruz in Paris to study "microbiology" at the Institut Pasteur was followed by the stay of a large number of Brazilian scientists at the Institute for more than a century.

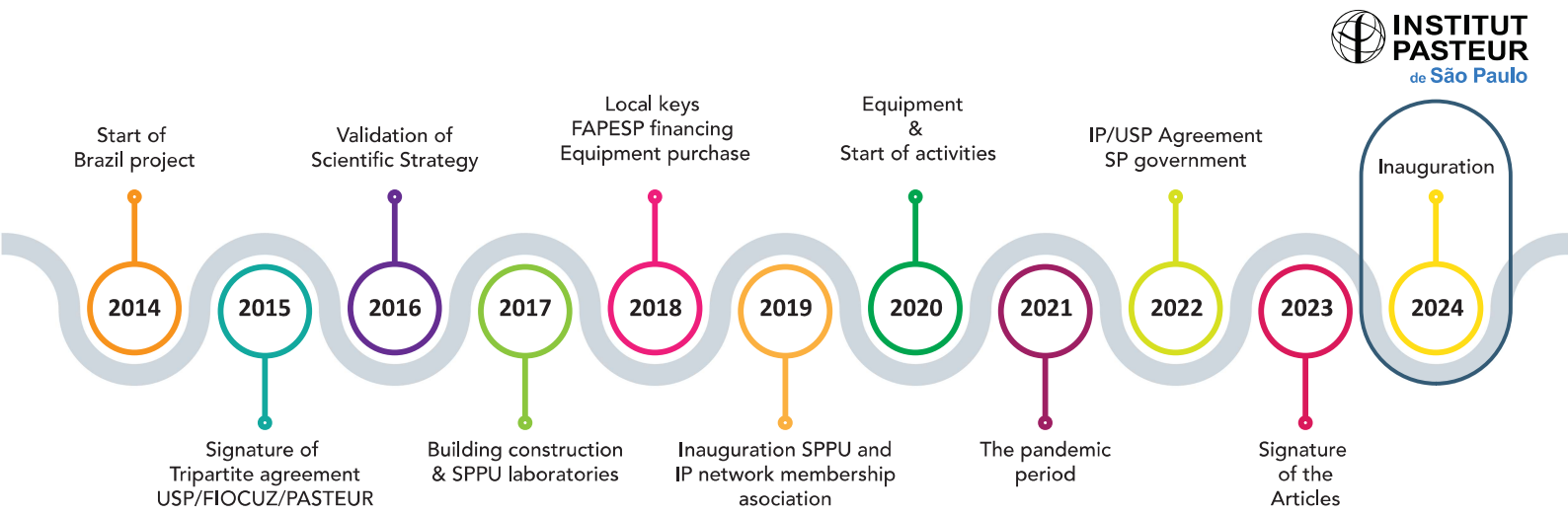
This tradition has been fur ther strengthened since 2004 with the Oswaldo Cruz Foundation (Fiocruz), a strategic body of the Brazilian Ministry of Health, which enabled its integration into the international Pasteur Network.

The cooperation between the Institut Pasteur and brazilian institutions expanded with the involvement of the University of São Paulo (USP), a major player in Brazilian and international scientific research, in the construction of a joint project, formalized in June 2015 through a tripartite agreement between Pasteur / Fiocruz / USP, renewed in 2020. This tripartite agreement aimed to implement a scientific strategy addressing major public health challenges in Brazil and the region. It provided for the development of joint initiatives (chairs, teaching, collaborative research through the funding of annual tripartite projects, etc.) with strengthened collaborations among the partners.

The project to establish the Institut Pasteur in Brazil has been on the Franco-Brazilian political agenda since 2014, with France ranking as the third most popular destination for Brazilian students after Portugal and Germany. The political shift in Brazil on January 1, 2023, placed education and culture once again among the priorities of public policy. University resources, scholarships, and research fellowships were significantly increased, and federal funding allocated to research (notably the national research fund) was expanded. At this point, while maintaining a federal-level approach and historical ties with Fiocruz, a strategy at the level of the State of São Paulo was favored, given the major opportunities for funding and access to research facilities.

Thus, in 2017, the partnership entered its first operational phase with the signing of a framework agreement for scientific cooperation between the Institut Pasteur and USP, which made available approximately 2,000 m² of research space for the development of a joint scientific strategy. The Pasteur-USP Scientific Platform (SPPU) was born on the USP campus in São Paulo. Inaugurated in 2019, it began operations in March 2020. Designed to host up to 80 Brazilian and foreign researchers, it has been driven by a multidisciplinary effort to develop innovative strategies against emerging or re-emerging/neglected diseases.

KEY FIGURES & CHRONOLOGY OF THE ESTABLISHMENT OF INSTITUT PASTEUR DE SÃO PAULO



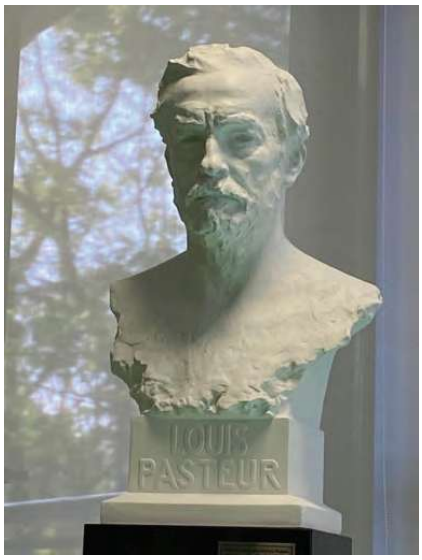
THE CREATION OF AN INSTITUT PASTEUR IN SÃO PAULO: AN ADDED VALUE

To consolidate the partnership and raise its visibility, USP and the Institut Pasteur advanced step by step toward the creation of the Institut Pasteur de São Paulo (IPSP). The success of the Pasteur–USP Scientific Platform (SPPU), which played a vital emergency role during the COVID-19 pandemic, was decisive in this evolution.

On March 31, 2023, in Paris, in the presence of high-level Brazilian and French authorities, the SPPU was officially transformed into the IPSP, a fully autonomous institute with its own legal personality, established as a private, non-profit association of public interest. This move, aligned with favorable political and funding contexts, strengthens the partners' collective capacity and delivers significant added value for public health in São Paulo, Brazil, and globally.

On March 27, 2024, French President Emmanuel Macron inaugurated the IPSP. As a new member of both the Pasteur Network and the Global Virus Network, the IPSP reinforces the Institut Pasteur's presence in Latin America—alongside Guadeloupe, French Guiana, Montevideo, and Fiocruz—and seals a landmark alliance with USP, the largest university in Latin America, positioning São Paulo as a regional and global hub for scientific innovation.

The continuation of this successful trajectory is already reflected in the establishment of new research groups supported by FAPESP/IP/USP, including Emerging Research Groups (G4), Young Investigator groups, and strategic projects. In parallel, in June 2026 the Institute reached a major new milestone by being labeled by FAPESP as an **International Research Center** – Institut Pasteur de São Paulo (CIP-IPSP). This recognition is intended to strengthen international scientific cooperation, attract visiting researchers, train young scientists, and consolidate and expand shared technological platforms, including flow cytometry, biological collections, structural biology, and recombinant protein production.



THE SCIENTIFIC STRATEGY OF THE INSTITUT PASTEUR DE SÃO PAULO

Revalidated in 2022 after the SARS-CoV-2 pandemic, IPSP's scientific strategy tackles major public health challenges by capitalizing on Brazil's rich biodiversity. It focuses on the effects of climate and environmental change on transmissible and non-communicable diseases, water quality, insect migration, disease transmission, host responses, and population well-being. A central objective is to explore how infectious processes can trigger severe neurological disorders—an area of major interest for advanced neuroscience.

A key ambition is to study the role of infections in neurodevelopment and neurodegeneration. To this end, IPSP is building a comprehensive database integrating omics, molecular biology, and immunology—supporting the discovery of new targets and the development of preventive, diagnostic, and therapeutic tools.

Strategically located near academia, IPSP is designed to foster a new research model equipped with state-of-the-art infrastructure and technologies. By sharing expertise and know-how, it promotes collaborative and innovative discoveries in products and processes.

Ultimately, IPSP's objectives—combined with Brazil's unique biodiversity—complement the strengths of the Pasteur Network, reinforcing its South American hub and advancing its role as a global leader in health research.

Guided by a One Health approach, IPSP research focuses on the impact of environmental changes on health, using population genetic diversity and systems biology to study immunological, inflammatory, and pathological processes in infectious processes such as Zika, influenza, SARS-CoV-2, and parasites such as African trypanosomes. By analyzing interactions between vectors, pathogens, reservoirs, and microbiomes, researchers aim to clarify transmission dynamics and disease development.

Located in one of the world's richest biodiversity hotspots with six major biomes, IPSP advances microbiological surveillance and pathogen discovery to strengthen preparedness. High-throughput technologies are applied to wildlife to identify reservoirs of emerging and re-emerging pathogens.

The recent creation of four-year and Young Investigator research groups dedicated to climate and health, eco-epidemiology, the surveillance of pathogens in wildlife, urban animals, and human populations, as well as the development of new therapeutic and vaccination strategies, further strengthens this mission within a Global Health framework.

CLINICAL AND MOLECULAR VIROLOGY LABORATORY

Edison Durigon IPSP/ICB-USP (PI)
Carsten Wrenger IPSP/ICB-USP (PI)

This research team is focused on clinical and molecular diagnostics, human and animal viroses, respiratory viruses, wildlife viruses, and emerging viruses.

Team :

André Filipe Rivais Martins Barateiro, IPSP/ ICB-USP (Postdoctoral researcher, FAPESP) ;

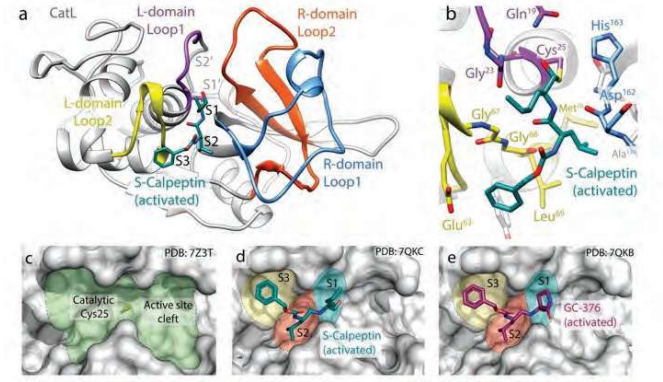
Lizdany Florez Alvarez, ICB-USP (PhD student, FAPESP) ;

Deivid Martins Santos (PD, FAPESP):
Deren Zehra Kocabiyik, ICB-USP (PhD student);

Targeting SARS-Cov-2 E protein by Rational Drug design

The E protein forms a pentameric ion channel (viroporin) that is essential for viral assembly, intracellular trafficking, and virulence. Its role in neutralizing the pH of the Golgi apparatus is critical for protecting the viral Spike protein during transit and maintaining infectivity. As a highly conserved protein, the E protein represents an attractive antiviral target not only against SARS-CoV-2 but also other coronaviruses.

Computational modelling of the pentamer enabled virtual screening of compounds targeting druggable pockets within the structure, leading to the selection of four candidate molecules. These compounds were evaluated in vitro, resulting in the identification of compound 007-728-417, which showed the most promising antiviral activity. This molecule was tested in two cell lines (Vero CCL-81 and LC-HK2), where it demonstrated potent antiviral effects against the Wuhan strain of SARS-CoV-2.



Neurotropic Betacoronavirus 1 infection in fatally ill non-human primates

In collaborations with the Institute of Virology at Charité, Berlin, approximately 1,400 samples collected from non-human primates (NHPs) in Brazil were analyzed at Charité, where multiple viral screening tests were performed using PCR (targeting viral hepatitis, alphaviruses, flaviviruses, arenaviruses, and orthobunyaviruses), as well as viral metagenomic studies using next-generation sequencing (NGS) on the Illumina platform. The NGS approach yielded noteworthy results, including the discovery of novel viruses and previously known viruses not yet described in NHPs. Specifically, NGS analysis enabled the detection of a Betacoronavirus, three Hepaciviruses, Pegivirus, and a Tulane virus.

Current Projects

CAPES/DAAD PROBRAL (20243270893P): BG-ONE: Brazilian-German One Health research platform for emerging pathogens
CNPq - Atração e Fixação de Talentos (446294/2024-1): Integrative Structural Biology and Cell-Based Assays for Targeted Drug Discovery against Viral Proteins of Orthobunyavirus oropoucheense
CNPq - INCT (409165/2024-7): DOHaD - Developmental Origins of Health and Disease
FAPESP Tematico (2023/07746-0): Drug Discovery contra Doenças Infecciosas Virais Humanas

Collaborations

Christian Betzel, University of Hamburg, Structural biology, Matthew R. Groves, University of Groningen, Structural biology Carsten Claussen, Fraunhofer Institute for Translational Medicine and Pharmacology, Drug discovery, Kay Grünewald, University of Hamburg, cryoEM, Alke Meents, DESY, Structural biology, Wolfgang Parak, University of Hamburg, Nanoscience, Steven Patrick Maher, University of Georgia, Drug discovery, Jean Felix Drexler, Virology Institute , Charité, Berlin.

NERVOUS SYSTEM DISEASE MODELING LABORATORY

The laboratory focuses on understanding neurodevelopment. To this end, we use cellular models of the nervous system in 2D and brain organoids generated from human induced pluripotent stem cells, derived from children with neurodevelopmental disorders, congenital and genetic syndromes, as well as from neurotypical individuals.

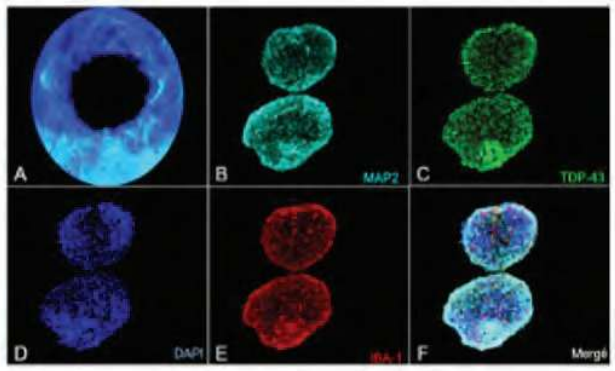
Patricia C. Beltrão Braga (PI)

Team :

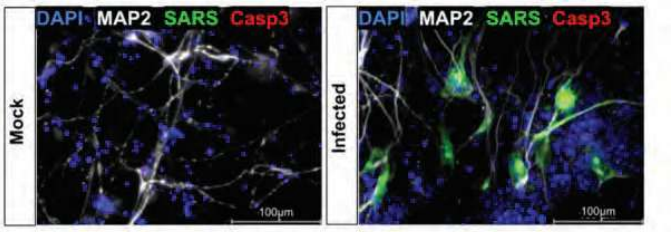
Nathalia Carrijo Oliveira, PhD student FAPESP, IPSP/ ICB-USP (presently at University of San Diego, San Diego, CA, USA)
Andrelissa Gorete Castanha, PhD student FAPESP, IPSP/ ICB-USP
Ana Luiza Moraes Octaviano, PhD student FAPESP, IPSP/ ICB-USP
Leticia Gonçalvez Oliveira, Master Degree student, FAPESP IPSP/FMVZ-USP

Generation of Assembloids

The group has established the first protocol for producing microglia from hiPSCs derived from exfoliated deciduous teeth of autistic patients and neurotypical controls, in to evaluate the contribution of microglia and neuroinflammation to autism spectrum disorders order and other neurodevelopmental conditions. An Assembloid protocol was eveloped that enables the initial culture of different cell types in monocultures, followed by their combination into either co-cultures (neurons and astrocytes) or tri-cultures (neurons, astrocytes, and microglia). This model provides insight into how different cell types interact under various conditions in the in vitro environment. Given that microglia are essential for maintaining homeostasis and immune defense in the CNS, their efficient interaction with other cells, such as neurons and astrocytes, is critical. For this experiment, HPCs were incorporated into the Assembloids, and within three weeks they differentiated into mature microglia.



Immunofluorescence images of Assembloids. (A) Assembloids at 4 weeks, bright field, 4× magnification. (B) MAP2 (light green), a neuronal cytoskeletal marker. (C) TDP-43 (green), a marker associated with ALS pathology. (D) DAPI (blue), nuclear marker. (E) IBA-1 (red), microglial cytoplasmic marker. (F) Merge. Magnification: 10×. Microscope: ECHO.



ZIKV and SARS-CoV-2 pathogenic mechanisms in the CNS were assessed using 2D human cell models and 3D iPSC-derived brain organoids. SARS-CoV-2 infected neural progenitors, cortical neurons, and NCPCs, enhancing inflammation and inducing progenitor apoptosis without productive replication. In mature 3D organoids, infection markedly increased IL-6, IL-15, IFN-γ, MIP-1β, and GM-CSF within 72 h.

Current Projects

IRIM-CNRS, "Evaluating the impact of viral neuroinfections on synaptic plasticity and neurodevelopmental disorders. »
ANRS-MIE, "Unraveling the cellular and molecular dynamics of maternal SARS-CoV-2 infection-induced neurodevelopmental disorders »

Collaborations

Raphael Gaudin-IRIM/CNRS
Chiara Zurzolo, IP-Paris.

TRYPANOSOMATIDS INFECTIOUS PROCESSES LABORATORY

Paola M. C. Minoprio (PI)

Using 2D and 3D techniques and microorganisms carrying reporter genes for luminescence or fluorescence, the team tracks infectious processes in vivo, aiming to better understand the microorganism–host relationship. Trypanosoma vivax, as well as Zika, Influenza, and SARS-CoV-2 viruses, are among the subjects of this team's studies. More specifically, their efforts focus on exploring the mechanisms that lead to brain pathology: neuroinvasiveness and neurodegeneration.

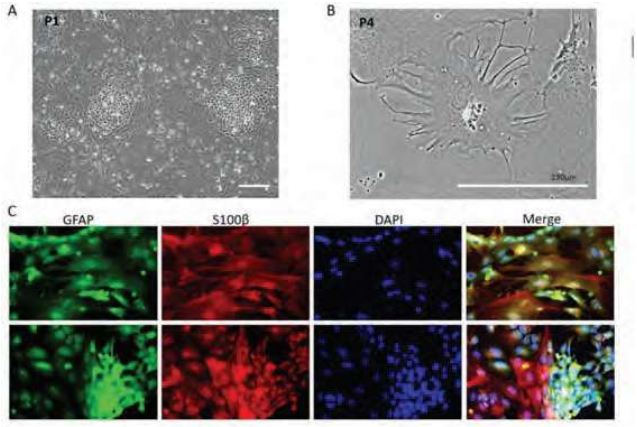
Team :

Vanessa B Malaquias, Pos-Doc FAPESP, IPSP/IP
Gabriela Paludo, Pos-doc student FAPESP, IPSP/IP
Roberto Augusto Pereira de Souza, Specialized Technician, USP/IPSP
Marina Kuntz Monti, Qualified Technician, USP/IPSP

Novel approaches to study infection-induced bovine CNS dysfunctions

Trypanosoma vivax infection causes bovine trypanosomosis, a chronic and often fatal disease responsible for millions of animal deaths annually, with major impact on livestock production. In Brazil, transmission occurs mainly via tabanid flies, and disease progression involves immune dysregulation and central nervous system (CNS) impairment.

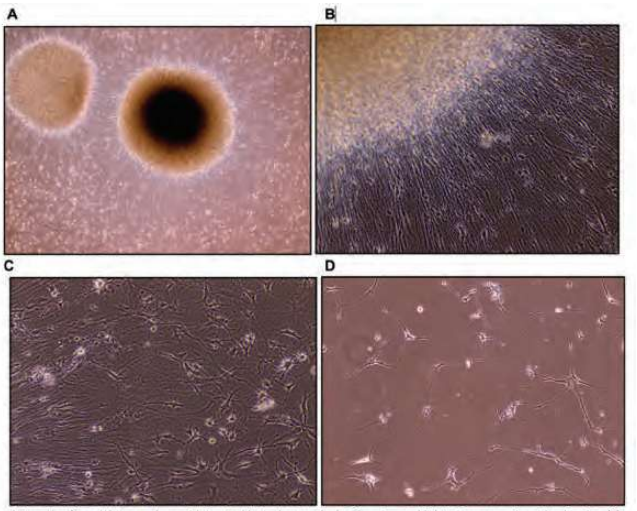
A central question is whether *T. vivax* crosses the blood–brain barrier (BBB) through direct disruption of intercellular junctions and/or via systemic inflammation that alters BBB permeability. To address this, bovine induced pluripotent stem cells (biPSCs) were used to generate 2D Transwell and 3D vascularized brain organoid models of the neurovascular environment. Thirty-two genetic markers (primers) were developed to characterize differentiated bovine neural cells. These umprecedented technology for bivnes demonstrate the project's technical feasibility and capacity to innovatively address how *T. vivax* interacts with the BBB.



Characterization of bovine astrocytes (bAC) derived from bNPC. Demonstration of the different degrees of maturation of bACs at passages one (A) and four (B). Immunofluorescence evaluation of astrocytic markers was performed in bACs at passage four (C). The bACs positively expressed GFAP (glial fibrillary acidic protein) and S100β, both typical markers of mature astrocytes. Nuclei were counterstained with DAPI.

Astroglia-Mediated Neuroinflammation and neurological COVID-19 symptoms

In a Brazilian cohort of COVID-19–positive patients, the most frequent neurological symptoms were headache (53.09%), brain fog (42.15%), and anosmia (38.72%). Using hiPSC-derived astrocytes, the team demonstrated that SARS-CoV-2 infection induces a strong pro-inflammatory response (IL-6, IL-15, IL-4), reduces KLK1 and EAAT1 expression, and increases apoptosis (cleaved caspase-3–positive cells). These findings suggest that neuroinflammation, impaired neurotransmission, and astrocytic cell death may contribute to the neurological sequelae of COVID-19.



Astrocyte culture. (A) Neurospheres rich in astroblasts photographed with an inverted light microscope using a 4× objective. (B) Border of a neurosphere rich in astroblasts photographed with an inverted light microscope using a 20× objective. (C) Astroblasts migrating from a plated neurosphere maintained under static conditions in the incubator. (D) Astrocytes generated from a plated neurosphere. Images A, B, and C had brightness increased by 20% for better visualization of the cells, while image D had brightness increased by 40% and contrast by 10%.

Current Projects

FAPESP 2017/27131-9, Integrated strategy for the study of infectious agents causing emerging and/or neglected vector-borne diseases of global impact. IP Paris/IPSP/ICB-USP, Exploring the mechanisms linking exposure to respiratory viruses and the triggering of neurodegenerative processes.

Collaborations

Fabiana Bressans, FMVZ, USP-Pirassununga,
Patricia C.B. Beltrao Braga, IPSP/ICB-USP,
Guilherme Dias de Melo, IP Paris

ECO-EPIDEMIOLOGY, DIVERSITY, AND EVOLUTION OF VIRUSES LABORATORY

This research group focuses primarily on the study of the biology, ecology, epidemiology, genetic diversity, and evolution of RNA and DNA viruses found in wild and domestic reservoir animals, with either known or still unknown zoonotic potential. This is carried out through the identification and isolation of new viral strains, zoonotic risk assessment, genomic surveillance, development and improvement of diagnostic methodologies, identification of potential hosts, as well as the genetic and phylodynamic characterization of different viral groups with emerging potential.

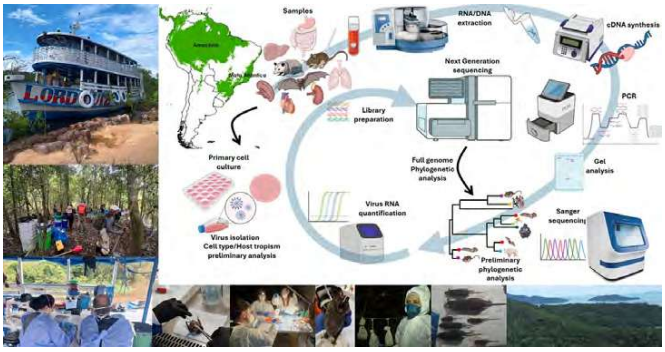
Luiz Gustavo Bentim Góes (PI)

Team :

Catarina Marcon Chiappetta, Pos-Doc student, FAPESP, IPSP
Adriana Rückert da Rosa, PhD student, DVZSP, IPSP/FMVZ-USP
Henrique Alves C. Baeza, Master degree student, FAPESP, IPSP/FMVZ-USP
Évelyn Moura de Lima, Master degree student, IPSP/FMVZ-USP, FAPESP
Rafaela Aparecida da Silva, Master degree student, FAPESP/ IPSP
Gabrielle dos Santos Tocha, TT4 technician, FAPESP/IPSP

From the forest to the cities: the risk of bat viruses affecting humans

The laboratory implemented training and the development of an efficient logistics system for carrying out expeditions, capturing, taxonomy, and collecting biological samples from bats, as well as receiving bat carcasses submitted for rabies diagnosis, including necropsies for tissue separation, nucleic acid extraction, and molecular assays for viral detection. Methodologies for detecting viral RNA from coronaviruses and different genera of paramyxoviruses were compared, standardized, and selected. In addition, initial detection and phylogenetic characterization of coronaviruses circulating in bats from the Atlantic Forest were performed, identifying both alphacoronaviruses and betacoronaviruses. As part of this work, Real-Time PCR assays were also developed for the detection of hantaviruses, coronaviruses, and arenaviruses circulating in Brazil, enabling rapid and sensitive screening of these viral lineages in the samples.



First time a measles-related virus isolated from bats in Latin America

The group participated of an international team of researchers from Latin America and Europe and, for the first time, successfully isolated and cultured a Morbillivirus from wild bats in Latin America. This virus belongs to the same group as human measles and other highly contagious pathogens. Until now, only genetic traces of morbilliviruses had been detected in bats, with no clinical isolates available. This breakthrough opens the door to crucial studies on the virus's biology, transmission risks, and zoonotic potential.

Current Projects

FAPESP/G4 Institut Pasteur, #2022/13054-0, Análise epidemiológica, evolucionária e ecológica do risco de eventos de spillover de vírus de morcegos habitantes da Floresta Atlântica

Collaborations

Marielton dos Passos Cunha, Universidade Estadual de Campinas (UNICAMP),
Felipe Fornazari, Universidade Estadual Paulista "Julio de Mesquita Filho" (UNESP),
Alexandre Reis Percequillo, Escola Superior de Agricultura Luiz de Queiroz – (ESALC-USP)
Milton Cezar Ribeiro – Instituto de Biociências, UNESP Rio Claro
Renata Muylaerte - Sydney School of Veterinary Science, The University of Sydney
Erika Hingst-Zaher – Instituto Butantan
Carlos Napoleón Ibarra Cerdeña - Laboratorio de Patología-Ecología Rural y Urbana, Cinvestav – Unidad Mérida

GENOMIC SURVEILLANCE AND VACCINE INNOVATION LABORATORY

SurviVax

Rúbens Prince dos Santos Alves (PI)

Seasonal influenza, caused by A and B viruses, still produces millions of severe cases and hundred of thousands of deaths every year, and rapid antigenic change keeps eroding vaccine effectiveness. SURVIVAX integrates wastewater-based genomic surveillance with self-amplifying RNA (saRNA) vaccine technology to detect circulating strains early and re-code vaccine antigens in real time. Over the past year the laboratory moved from method development to a working surveillance system: a metropolitan sampling network in routine operation, digital PCR quantification validated against clinical series, and an environmental signal that anticipates influenza hospital admissions by about two weeks. The same data now feed the design of broad-spectrum RNA replicons. The goal is a surveillance-guided vaccine pipeline that responds to what is actually circulating, instead of to what was circulating a year earlier.

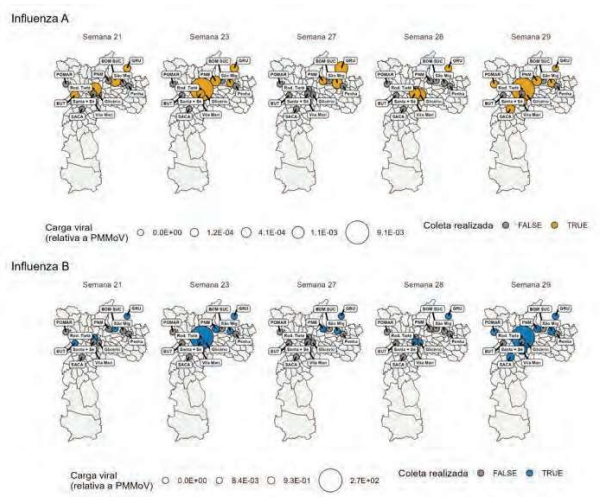
Team :

Raquel de Oliveira Souza, PhD student, CNPq/IPSP
Izabel de Geus Monteiro Gomes, MSc FAPESP, IPSP

Sávio Di Stasi Zanon, undergraduate researcher, IPSP
Ana Sophia Melo de Omena, undergraduate researcher, IPSP
Rohan Laurent, undergraduate student, McGill University/IPSP
Carla Longo de Freitas, Pos-doc student, FAPESP/IPSP

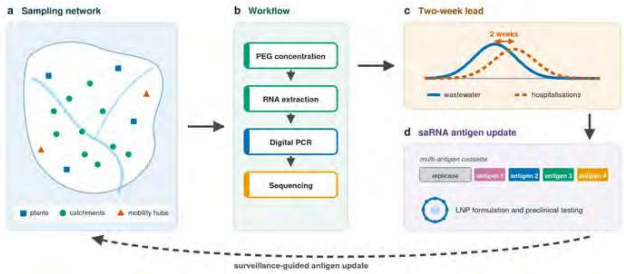
From setting up the lab to a running pipeline :

Metropolitan surveillance network in routine operation.
Sampling covers wastewater treatment plants, pumping stations, manholes, the international airport, and the main bus terminal.
Validated concentration and extraction workflow.
PEG precipitation was the most efficient and consistent method for influenza A/B RNA recovery and is now used routinely with process controls.
Digital PCR established as the quantification standard.
dPCR outperformed RT-PCR, with positivity >90% for influenza A and ~75% for influenza B, and 1.8- and 9.9-fold higher integrated signals.
Integrated environmental, clinical, and territorial data.
Wastewater signals preceded influenza hospitalizations by ~2 weeks and were associated with social vulnerability, urban centrality, and age structure.
Broad-spectrum saRNA replicons functionally validated.
The team produced HA head/stem, NA, NP, and M2e constructs, and established reporter-based transfection as routine quality control before preclinical evaluation.



Impact on public policies, technologies, or society:

In partnership with Insper, the project combines wastewater influenza surveillance with socioeconomic and mobility data to predict outbreaks and aid public health decisions. Wastewater signals came about 2 weeks before influenza hospitalizations, allowing earlier vaccination, antivirals, and healthcare readiness. CETESB anchors the network within the state environmental system, while standardized workflows support replication in other metropolitan areas and future pandemic preparedness.



SURVIVAX links surveillance and vaccine design by analyzing wastewater from São Paulo, including treatment plants, urban catchments, the airport, and bus terminal, using digital PCR and sequencing. The environmental signal predicts influenza hospitalizations about two weeks ahead, identifies circulating variants, and encodes them into self-amplifying RNA replicons with influenza antigens. These are validated in vitro and moved to preclinical testing, feeding the next surveillance cycle.

Current Projects

- IP-G4 Group / FAPESP 2024/03895-3. Overcoming Influenza through Advanced Wastewater Surveillance and Accelerated Development of Replicating RNA Vaccines.
- CETESB, Companhia Ambiental do Estado de São Paulo. Technical cooperation for access to wastewater samples across the São Paulo metropolitan area, aimed at genomic surveillance of influenza viruses.
- Insper, Instituto de Ensino e Pesquisa. Research partnership for predictive models based on artificial intelligence, integrating environmental, socioeconomic and public policy data.
- FAPESP 2025/26672-2, thematic project on avian influenza. Dual innovation for avian influenza control: development of an RNA vaccine and of a DIVA diagnostic test for food safety.
- Pasteur Network. Participation in the wastewater surveillance initiative coordinated with Institut Pasteur de Lille and Institut Pasteur de Guadeloupe.

Collaborations

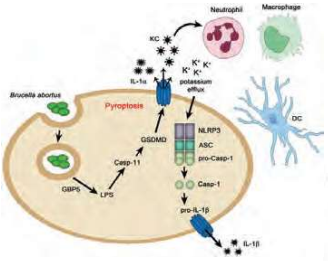
Anubis Vega-Rúa, Institut Pasteur de Guadeloupe
Saylon Alves Pereira, Insper, Instituto de Ensino e Pesquisa, São Paulo
Viviane S. Boaventura de Oliveira & Leonardo Paiva Farias, Fiocruz Bahia
Viviane Fongaro Botosso, Virology Laboratory, Instituto Butantan
Maria Inês Zanoli Sato, CETESB, São Paulo
Emanuel Carrilho, São Carlos Institute of Chemistry, University of São Paulo
Helena Lage Ferreira, FMVZ, University of São Paulo
Robert Andreata-Santos, Institut Pasteur de São Paulo
Christian Bréchot, University of South Florida, mentor

IMMUNOLOGY OF INFECTIOUS DISEASES /VACCINOLOGY LABORATORY

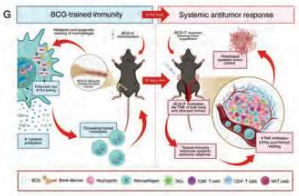
The research Group has as its central theme the study of innate immunity, focusing on the recognition of pathogens by host membrane and cytosolic receptors. Within this scope, the group investigates the role of BCG as an inducer of trained innate immune responses and the mechanisms of heterologous protection of new vaccine formulations against emerging infections and in cancer immunotherapy.

Sergio Costa Oliveira (PI)

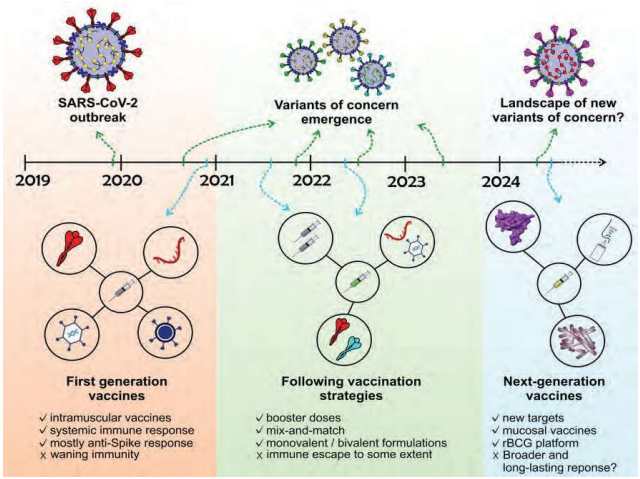
When Brucella gets inside host cells, LPS, nucleic acids, and other secreted products become the major bacterial agonists involved in bacterial pathogenesis



BCG Induces anti-tumor immunity



Development of new anti-COVID vaccines



Team :

Fabio Mambelli, Pos-doc student, FAPESP/IPSP
Alba Marina Gimenez, Pos-doc student, FAPESP/IPSP
Ana Carolina Valente, Pos-doc student, FAPESP/IPSP
Karla Karoline Santos Ramos, PhD student, FAPESP
Nina Gual de Queiroz, TT5 FAPESP
Nelson Cortes, Pos-doc student, FAPESP/IPSP
Vinicius Borges, PhD student, FAPESP

The most impactful results of the period can be summarized as follows :

Determination of the CD4+ T lymphocyte subpopulation as the most important in protection after immunization with our BCG-COVID vaccine.

Identification of the signaling pathway mediated by the MyD88 molecule as crucial in immunotherapy using BCG against bladder cancer and melanoma.

Determination of mitochondrial dysfunction and the Unfolded Protein Response pathway as important in the pathogenesis of infection by Brucella abortus.

Current Projects

FAPESP 2023/02577-5 : Study of the mechanisms responsible for trained immunity induced by Bacillus Calmette-Guérin (BCG) in infectious diseases and cancer.
FAPESP 24/19233-0 :The role of the STING molecule in trained innate immunity in enhancing the efficiency of cancer immunotherapy.

Collaborations

Glen Barber, Ohio State University (USA);
Judith Smith, University of Wisconsin-Madison (USA)

COMPUTATIONAL SYSTEMS BIOLOGY LABORATORY

Helder Nakaya (PI)

The laboratory's research lines lie at the intersection of data science and health, covering a wide range of topics from digital epidemiology to spatial transcriptomics. The systems biology front aims to unravel the molecular mechanisms of various human diseases—including inflammatory, autoimmune, infectious, neurological, and congenital conditions. The lab also lead projects that incorporate computer vision for diagnostics, as well as the use of generative artificial intelligence and large language models to analyze data and medical literature. In addition, the work in pharmacogenomics and structural biology focuses on personalizing treatments and proposing drug repurposing strategies. By employing advanced techniques such as big data analysis, machine learning, and modeling of interactions among biological components, the laboratory seeks innovative approaches for diagnostics, therapeutics, and a deeper understanding of health conditions.

Developing models to facilitate and enhance transcriptomic data

On example of the group project is the development of computational strategies to better understand and stratify patients with Inflammatory Bowel Disease (IBD), using publicly available microbiome data. The current goal is to build integrated microbial association networks that account for patient heterogeneity and to develop deep graph learning models capable of generating meaningful patient representations.

These models aim to identify robust microbial signatures and stratify patients, contributing to precision medicine in IBD and potentially in other microbiome-related conditions.

The lab initiated the developOOment of TENTACLES (Transcriptomics ExploratioN Tool through Aggregation of CLassifiErS), an R package designed to facilitate and enhance transcriptomic data analysis. The package integrates multiple machine learning algorithms and feature selection methods to identify robust gene markers in RNA-Seq and microarray datasets. The core code of TENTACLES was completed, and the team is currently working on code optimization, dependency reduction, and final testing.

Current Projects

CNPq 405819/2024-2 : Precision Health in SUS using AI to improve outcomes in chronic diseases
CNPq 442272/2024-3 (PI): Innovation against health disinformation: multimodal AI WhatsApp chatbot.
FAPESP 2018/14933-2 (PI): Integrative Biology Applied to Human Health.
FAPESP 2018/21934-5 (co-PI): Network statistics: theory, methods, applications.

Collaborations

Alberto Santos Delgado, DTU Biosustain, Denmark, Giorgio Montesi, PhD student visitor of IPSP, University of Siena.

PASTEUR NETWORK CLIMATE AND HEALTH ACCELERATOR PROGRAM

THE CLIMATE AND HEALTH LABORATORY IPSP

Mauro César Cafundó de Moraes (PI)

The Pasteur Network (PN) is a global network of 33 institutes, aiming to establish a sustainable community for climate and health observation. This project, which includes a fellowship program, represents the first steps toward a new multidisciplinary approach to climate and health within the Pasteur Network. In this context, PN has selected 17 Research Fellows dedicated to the field of Climate Change to join Network members based in low- and middle-income countries. This role is fundamental for advancing the understanding of, and response to, the health impacts of climate change in local contexts.

The fellowship cohort was conceived as a sustainable approach to climate and health issues within the Network. For this reason, the efforts, results, and activities developed by the fellows—such as leading communities of practice on climate- and health-related policies and actions, and producing sustainable public goods—must be carried out with a focus on long-term feasibility and durability.

Building strong relationships at national, regional, and global levels will be essential to achieve this goal. The fellows are expected to form a cohesive and complementary community, with regional support provided by a model hub and by the project manager overseeing the entire Accelerator Program of the Climate and Health Observatory.

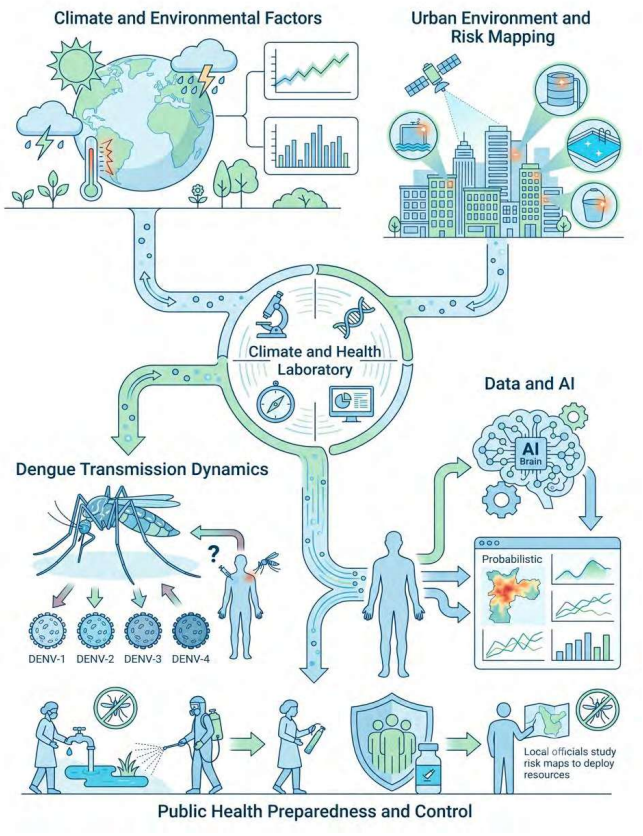
Mauro C. C. Morais was selected for one of these fellowships (funded by the Rockefeller Foundation and the HKJC Institute of

Philanthropy) at IPSP, under the supervision of the IPSP Director, with scientific guidance from Edison Durigon (PA) and mentorship from diplomat Michele Boccoz.

Collaborations

Leonardo W. Heyerdahl - Institut Pasteur, Paris, France.
Heidi Larson - London School of Hygiene & Tropical Medicine, Department of Infectious Disease Dynamics, London, UK.
Claudia Maria de Castro Gomes - Faculdade de Medicina da Universidade de São Paulo (FMUSP), São Paulo, Brasil.
Milena Arnaud Franco da Igreja - Faculdade de Medicina da Universidade de São Paulo (FMUSP), São Paulo, Brasil.
Prof. David Bishai / Xinyu Zhang - Hong Kong University (HKU), Department of Public Health, Hong Kong.

The project uses public climate and health data to build an early warning system for climate-sensitive vector-borne diseases. Using a One Health approach, machine learning models analyze past outbreak drivers to predict high-risk areas for resource allocation. It uniquely integrates climate variables - like temperature, humidity, pressure, and wind - with health data such as vaccine availability, offering a flexible system adaptable to regional variations in vectors, hosts, and geography.
The group targets three key diseases in Brazil: yellow fever in the Southeast, where temperature anomalies sustain sylvatic transmission cycles; American cutaneous leishmaniasis in the Amazon, linking deforestation and climate to sandfly-driven human cases; and dengue in São Paulo, examining climate and urban socio-environmental factors relationship with the reemergence of viral serotypes.



Current projects

Climate and Health Accelerator Program, Pasteur Network - The Rockefeller Foundation and Institute of Philanthropy (IOP) joint grant n. 2024 HTH 005

LAVIRU - LABORATORY OF URBAN RODENT VIROLOGY

Robert Andreata Santos (PI)

LAVIRU investigates viruses with zoonotic potential circulating in urban ecosystems, with a special focus on synanthropic rodents from the city of São Paulo. The laboratory's research lines lie at the intersection of applied virology, molecular epidemiology, and public health, combining field surveillance with genomic and evolutionary analyses to understand how viruses emerge, evolve, and spread in urban environments. By integrating ecological, climatic, and epidemiological data, the group aims to identify the drivers of viral circulation and translate surveillance findings into actionable knowledge that supports diagnostics, vaccine development, and public health decision-making.

Team:

Danielle Conte — PostDoc, FAPESP
Tamires Santos de Arruda — PhD student, FAPESP
Ana Paula Cunha Chaves — PhD student, CAPES
Isabel Sakanoue Leite — Undergraduate researcher, FAPESP

Mapping zoonotic viral diversity in urban rodent populations

One example of the group's work is the comprehensive surveillance of viruses circulating in Rattus rattus and Rattus norvegicus populations across different regions of São Paulo, conducted in partnership with COVISA. Using nested PCR, Sanger sequencing, and metagenomics, the team screens for a broad panel of viruses — including Arenavirus, Hantavirus, Coronavirus, Hepatitis E virus, and Orthobunyavirus, among others — and applies phylogenetic and genomic analyses to characterize their diversity, evolution, and circulation patterns.

These efforts aim to build an integrated framework linking viral detection to ecological and epidemiological data, strengthening early-warning surveillance and supporting evidence-based public health actions against emerging zoonotic threats.

Current Projects

FAPESP 2025/04691-5 (PI): Identification of viruses with zoonotic potential in the urban rodent population of São Paulo: monitoring, diagnosis and characterization.
Global Virus Network (GVN) Educational and Training Grant.

Collaborations

Eduardo de Masi — COVISA, São Paulo City Hall (Coordination of Health Surveillance)
Marcos Heinemann — School of Veterinary Medicine and Animal Science, University of São Paulo (USP-FMVZ)
Federico Costa — Federal University of Bahia (UFBA)
Carla Braconi; Luiz Mário Ramos Janini — Federal University of São Paulo (UNIFESP)
Luís Carlos de Souza Ferreira — University of São Paulo (USP)

THERAPEUTICS FOR COMBATING MULTIDRUG-RESISTANT PATHOGENS

Caio Haddad Franco (PI)

This research group investigates pathogen–host interactions, with a primary focus on drug discovery for bacterial infections. By combining cell biology methods, high-throughput screening and automated microscopy, the group seeks to identify host mechanisms that enable intracellular colonization by pathogenic bacteria. The team investigates compounds capable of modulating host processes and revealing new therapeutic pathways for chronic and resistant infections.

Team :

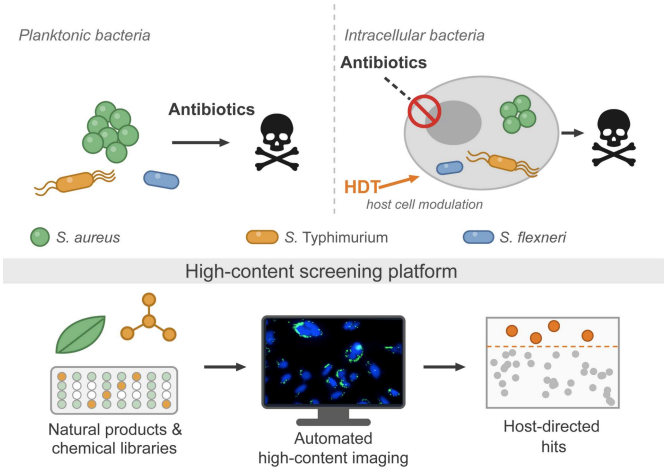
Camila Comin, PhD student, IPSP.
Lola Desert, Intern Student, McGill University (Canada).
Manon Anglade, Intern Student, ISIFC (France).

Looking for alternative antimicrobial approaches via host-directed therapeutics

Bacterial infections caused by multidrug-resistant pathogens pose a severe global health threat. Several clinically relevant bacteria — including methicillin-resistant *Staphylococcus aureus* (MRSA), *Salmonella* spp. and *Shigella flexneri* — invade and persist within host cells. In this niche, conventional antibiotics often fail to reach effective concentrations, contributing to treatment failure, relapse and chronic infection.

Host-directed therapy (HDT), which targets host pathways essential for bacterial survival rather than the pathogen itself, offers a promising strategy to overcome antibiotic resistance. The group applies high-throughput, microscopy-based phenotypic screening to identify compounds that restrict intracellular bacterial replication by modulating host processes, focusing on natural products derived from Brazilian biodiversity and on diverse chemical libraries.

Selected candidates are validated across multiple human cell types and clinical isolates, and their mechanisms of action are investigated using the Cell Painting assay, a high-dimensional phenotypic profiling method. Bioassay-guided fractionation is applied to complex extracts, and lead candidates are evaluated in murine infection models using *in vivo* imaging.



Current Projects

FAPESP 2025/08144-9 (PI): Microscopy-based high-throughput screening of natural compounds to identify novel host-directed therapeutics for combating intracellular bacteria.

FAPESP 2025/15291-8 (Associated Researcher): MicroRNAs at the Host-Pathogen Interface: from Mechanistic Insights to Therapeutic Potential.

FCT 2024.15450.PEX (PI): Deciphering MicroRNA Mechanisms of Action via High-Dimensional Multiparametric Cell Painting Assay. (Portugal).

FCT 2024.13677.PEX (Associated Researcher): Exploiting novel host-directed antimicrobials for combating infections by *Staphylococcus aureus*. (Portugal).

Collaborations

Ana Eulalio, Imperial College London, UK.
Carole Devaux, EURESTOP, EU.
Carolina Moraes, FCF–USP, Brazil.
Laura Alcântara, Instituto Butantan, Brazil.
Lucio Freitas-Junior, ICB-II–USP, Brazil.
Marcos Heinemann, FMVZ–USP, Brazil.
Regildo Gonçalves da Silva, Unesp–Assis, Brazil.
Sergio Schenkman, CEPID ARIES/Unifesp, Brazil.

SIMBA - VIRAL SPILLOVER AND ONE HEALTH LAB

Angélica Cristine de Almeida Campos (PI)

The acronym **SIMBA** means **S**pillover, surveillance, monitoring and zoonotic potential analysis of **I**nfluenza A virus in **M**igratory birds, **B**ats and other m**A**mmals.

This group focuses on the surveillance and genetic evaluation of Influenza A virus circulation, in the OneHealth perspective, in key hosts (wild and domestic) including migratory and passeriform birds,livestock, bats and other mammals, across South America, which are critical for viral reassortment and potential zoonotic transmission. Activities include rapid identification of potential emergent strains at human-animal interfaces, viral characterization and phylogenetics, updating host species lists in diverse ecosystems, and correlating host ecology with influenza virus diversity and prevalence.

Team :

Gabriela Prado Paludo –TT-5 FAPESP
Priscila Neres Alves Pereira - Master Student-Bioinformática-USP

Current Projects

FAPESP JP 2024/10801-5, SIMBA - Spillover, surveillance, monitoring and zoonotic potential analysis of Influenza
A virus in Migratory birds, Bats and other mAmmals

FAPESP TT-5, 2025/25040-2, Specialized cell culture implementation, standardization of Air-Liquid Interface (ALI) systems and Transwell, molecular screening, and phylogenetic analysis of Influenza

Collaborations

Jan Felix Drexler, CHARITÉ Universitätsmedizin Berlin - Germany
Luiz Gustavo Bentim Góes, LEDEVE, Institut Pasteur de São Paulo-IPSP
Erika Hingst-Zaher, Instituto Butantan
Camila Lorenz, Instituto Butantan
Carlos Napoleón Ibarra Cerdeña, CINVESTAV-Mérida, (Mexico)
Marielton dos Passos Cunha, Universidade Estadual de Campinas (UNICAMP)
Felipe Fornazari, Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP

A series of International Seminars since March 2024
"Les vendredis de l'Institut Pasteur de São Paulo"

Since its inception, the Institute has hosted weekly seminars every Friday, fostering a vibrant forum for scientific exchange. Additionally, four to six high-level workshops are held annually, featuring distinguished international speakers. These special events aim to encourage collaboration and boost the institution's global visibility. The IPSP looks forward to welcoming participants from diverse scientific backgrounds to share knowledge, foster dialogue, and build bridges for future research partnerships. The international guests scheduled since March 2024 are listed below.

Prof. Yasmine Belkaïd, NIH & Institut Pasteur, Paris, France
28/03/2024
Title: Immunity to the Microbiota and Tissue Physiology

Prof. Glen Barber, University of Miami, Miami, USA
19/07/2024
Title: Innate Immune STING Signaling in Infectious Disease and Cancer

Prof. Chiara Zurzolo, Institut Pasteur, Paris, France
7/02/2025
Title: Reshaping Intercellular Connectivity with Tunneling Nanotubes: Structure, Formation, and Role in Disease Progression

Prof. Sujan Shresta, Center for Vaccine Innovation, La Jolla Institute for Immunology, La Jolla, USA
25/04/2025
Title: Dendritic Cell Response to Flavivirus

Prof. Alexandre Alanio, Institut Pasteur, Paris, France
26/05/2025
Title: Heterogeneity of Cryptococcus Populations, Focus on VBNC and Persistent Cells

Prof. Felix Rey, Institut Pasteur, Paris, France
06/06/2025
Title: Common Antibody Mechanism to Block Class II Virus Entry and Plasmodium Transmission

Prof. Nicolas Wolff, Institut Pasteur, Paris, France
27/02/2026
Title: From Molecular Mechanisms of Auditory Sensory Cells to Biotechnological Advances in Imaging and Cell-Free Protein Expression

Prof. Marc Lecuit, Institut Pasteur, Paris, France / INSERM
17/04/2026
Title: Common Antibody Mechanism to Block Class II Virus Entry and Plasmodium Transmission

An International Reach Strengthened by Student Mobility

IPSP hosts PhD students and postdoctoral fellows from Latin America (Colombia, Argentina) and is committed to offering its young researchers high-level courses and training opportunities abroad—not only in Paris at the Institut Pasteur, but also in Mexico, Spain, Germany, Denmark, the Netherlands, and beyond.

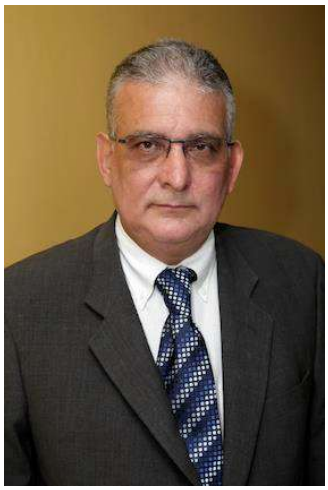
These experiences allow our young researchers to establish new scientific relationships while also contributing to enhancing the international visibility of IPSP, opening avenues for potential collaborations.

The growing recognition of IPSP at both national and international levels has also attracted foreign students (from Italy, Germany, and particularly France) seeking to carry out long-term internships (4 to 6 months). This inbound mobility is especially valued by USP, which emphasizes the importance of reciprocal exchanges, as well as by the French cooperation services.

Notable examples include internships by Maho Saillet (SupBiotech Paris), Farah Mardini (Sciences Po Paris), Suzanne Reverdy (Institut Polytechnique de Bordeaux), and Izabel Monteiro Gomes (Centrale Nantes, in a dual-degree program with USP).

In the first semester of 2026, IPSP welcomed Maximilien Malivoir (Université de La Réunion), Léa Bernard, Camille Gratreaud, Juliette Dumartin and Emy Bernussou (Université de La Rochelle), Lola Desert (McGill University), and Manon Anglade (Université de Franche-Comté), reflecting the Institute's proactive commitment to fostering the inbound mobility of French and international students.

IN 2026, THE IPSP WELCOMES ITS FIRST VISITING PROFESSORSHIP



In 2026, the IPSP will have the privilege of welcoming **Professor Vasco Ariston de Carvalho Azevedo** as a Visiting Professor for a one-year appointment. Professor Azevedo is a retired Full Professor and currently a Volunteer Professor at the Federal University of Minas Gerais (UFMG), a CNPq 1A Research Fellow, a full member of the Brazilian Academy of Sciences, and a corresponding member of the Göttingen Academy of Sciences and Humanities.

With an extensive scientific career spanning **genetics, bioinformatics, and microbiology,** his research focuses on genomics, biotechnology, vaccines, probiotics, and biosafety. At the Institut Pasteur de São Paulo (IPSP), Professor Azevedo will contribute his expertise to international scientific collaborations, strengthening research initiatives in molecular biology, genomics, and biotechnological applications relevant to both human and animal health.

TESTIMONIALS

Quelques mots d' **Emmanuel Lenain**, Ambassadeur de ***France au Brésil:***

"L'institut Pasteur de São Paulo,inauguré par le président Macron le 27 mars 2024, est un modèle de coopération structurante entre la France et le Brésil. Initié en 2015 avec un accord tripartite entre l'Institut Pasteur, l'Université de São Paulo et la Fondation Oswaldo Cruz, il s'intègre dans la longue tradition du partenariat scientifique entre nos deux pays dans le secteur de la santé, qui remonte à la formation reçue par Oswaldo Cruz à l'Institut Pasteur en 1896.

Le soutien sans faille de l'USP, qui a mis à disposition un nouveau bâtiment, ainsi que de la FAPESP, qui a porté le financement d'équipements, la volonté de l'Institut Pasteur en France et notamment de Paola Minoprio qui dirige ce projet, ont été des facteurs essentiels de sa réussite, pour laquelle l'ambassade s'est profondément investie.

Durant la pandémie de COVID-19, la 'Plate-forme scientifique Pasteur-USP', alors en pleine ascension, a su réorienter rapidement certaines de ses activités de recherche pour contribuer à l'effort collectif contre la pandémie. Je salue ce pragmatisme et cette souplesse, qui illustre à quel point la science est au service de la société. Aujourd'hui déjà doté de 8 groupes de recherche, résolument franco-brésilien et ouvert sur le monde, l'IPSP, par ailleurs membre du Pasteur Network, mène des recherches sur des thématiques de santé cruciales pour les populations de nos deux pays – et au-delà, telles que l'éco-épidémiologie, la surveillance génomique, l'innovation en vaccinologie, ou encore les maladies neurologiques.

Grâce à sa production scientifique de premier plan, il contribue à l'amélioration des connaissances et à l'innovation en santé, et fait ainsi rayonner la coopération scientifique franco-brésilienne."

Message from **Emmanuel Lenain**, Ambassador of **France to Brazil:**

"The Pasteur Institute of São Paulo, inaugurated by President Emmanuel Macron on 27 March 2024, stands as a model of structured cooperation between France and Brazil. Established in 2015 through a tripartite agreement between the Institut Pasteur, the University of São Paulo, and the Oswaldo Cruz Foundation, it builds upon the long-standing tradition of scientific partnership between our two nations in the health sector—a tradition that traces its roots to Oswaldo Cruz's training at the Institut Pasteur in 1896.

The unwavering commitment of the University of São Paulo, which provided a new facility, and of FAPESP, which financed the acquisition of cutting-edge equipment, together with the determination of the Institut Pasteur in France—and in particular the leadership of Paola Minoprio in guiding this project—have been decisive in ensuring its success, to which the Embassy has also devoted significant effort.

During the COVID-19 pandemic, the "Pasteur–USP Scientific Platform," then in full development, swiftly adapted its research activities to contribute to the collective response to the crisis. This pragmatism and flexibility exemplify how science is placed at the service of society.
Today, the IPSP already hosts eight research groups, is resolutely Franco-Brazilian in spirit, and is open to the world. As a member of the Pasteur Network, it conducts research on health issues of crucial importance to the populations of both our countries —and beyond—including eco-epidemiology, genomic surveillance, vaccine innovation, and neurological diseases.

Through its high-quality scientific output, the Institute contributes to the advancement of knowledge and innovation in health and thus serves as a beacon of Franco-Brazilian scientific cooperation."

"The IPSP constitutes a defining milestone in a new phase of Franco-Brazilian institutional cooperation, particularly "Franco-USPian" cooperation. I consider it this way not only because of the notable excellence of the scientific research conducted there, but also because of the unprecedented format of creating a new legal entity bringing together IP-Paris and USP for this purpose, which ensures greater sustainability and management efficiency."

Fernando Menezes, President of the IPSP Board

"The recent installation of Pasteur Institute in São Paulo became rapidly a case of success both by its role in the scientific relations between France and Brazil as well as because its growing contribution to the research in global health issues."

Marco Antonio Zago, President of FAPESP, former President of the University of São Paulo

"To be part of the board of IPSP is a real honor. The research projects are very interesting, and the Institute has a sound strategic development plan to attract funding and new researcher. Pasteur and USP have demonstrated their ability to work together on a long term basis."

François Romaneix, former DGA Institut Pasteur, Vice- President of the IPSP Board

"The establishment of the Institut Pasteur of São Paulo facilitates USP's integration into a global network of research laboratories, thereby elevating the University's already well-recognized scientific output to a new level. The presence of international researchers introduces innovative methodologies and provides access to knowledge produced across diverse regions in the world. The University of São Paulo firmly believes that internationalization constitutes a fundamental instrument for enhancing the education of its students and advancing the quality and impact of its research."

Prof Carlos Gilberto Carlotti Jr., former President of the University of São Paulo

"The establishment of the Institut Pasteur in São Paulo was a major milestone for the scientific research policies of the São Paulo State Government. It is especially important to have a branch of a well-known international research organization in the state that is carrying on strategic research works within a local institution and Brazilian partners."

Vahan Agopyan, Secretary of State for Science and Technology, former President of the University of São Paulo

"The inauguration of the Institut Pasteur de São Paulo in March 2023 represents a major advancement in addressing public health challenges related to climate and environmental changes, central theme of Franco-Brazilian cooperation in research. The transformation of the initial and historic partnership with the University of São Paulo into an autonomous institute with multidisciplinary expertise and modern equipment is a true success and highlights Pasteurian science. The Institut Pasteur de São Paulo is also an essential pillar of the Pasteur Network, capable of conducting innovative research following the "One Health" approach and becoming a key player in Latin America."

Odette Tomescu Hatto, Vice President for International Affairs, Institut Pasteur

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Publications

INSTITUT PASTEUR de São Paulo

2020

2026

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