Network of the European Union (EU) and the Community of Latin American and Caribbean States (CELAC) promoting joint innovation and research activities

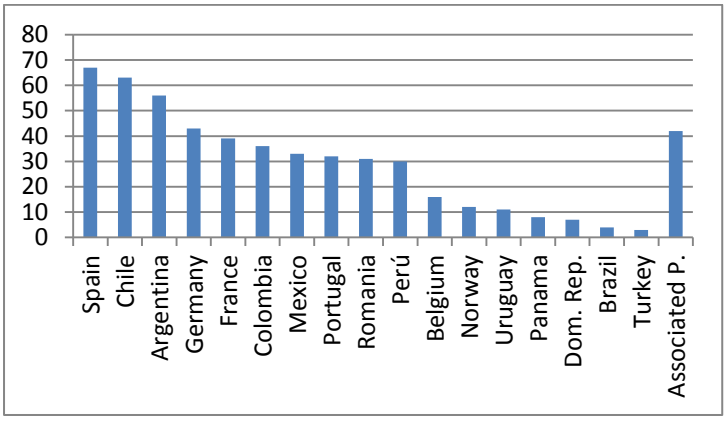
ERANet-LAC is a Network of the European Union (EU) and the Community of Latin American and Caribbean States (CELAC) on Joint Innovation and Research Activities funded by the European Commission for a period of three and half years (2013-1017).

1st ERANet-LAC joint call
Funded Projects

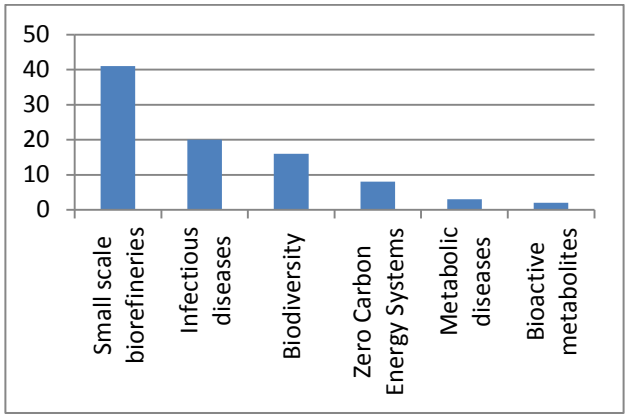
As a result of the 1st ERANet-LAC joint call, 20 funding organizations from Europe, Latin America and the Caribbean countries are funding 13 transnational research and innovation projects.

75 research institutions and small and medium enterprises (SMEs) from both regions are involved in the international consortia. The total financial volume amounts to 9.6 million €. The projects address the thematic fields Bioeconomy, Health, Biodiversity and Energy. In total, 90 proposals involving 533 applicants from research institutions and SMEs were submitted. Approximately a quarter of the proposals involve innovation actors.

Total no. of applicants per country



No. of proposals per thematic area



The present document gives information on the projects, on their coordinators and project partners, and a summary of each of the projects funded in the first ERANet-LAC joint call.

2nd ERANet-LAC Joint Call will be launched in December 2015

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CONTENT

Thematic field: Bioeconomy / Energy

Project acronym:	GREENBIOREFINERY
Project full title:	Processing of brewery wastes with microalgae for producing valuable compounds
Topic:	Small scale self-sustainable biorefineries
Total project costs:	394.727,00 €
Project duration (months):	36
Project Coordinator:	University of Almeria, Spain Professor F. Gabriel Acien Fernandez, mail: facien@ual.es

Project Partners

Country	Institute	Name
Spain	Laboratório Nacional de Energia e Geologia, I.P.	Dr. Ing. Alberto Reis
Colombia	University of Antioquia	Dr. Lucia Atehortua
Argentina	National Technological University Regional Faculty Buenos Aires	PhD Victor Busto
Spain	Cervecería Unión S.A	Elvis Rojas
Spain	Mahou San Miguel	Carmen Orozco

Project Summary

The objective of GREENBIOREFINERY project is to develop new strategies to generate valuable bioproducts by integrating the treatment of brewery wastes with the production of microalgae biomass and derivate products. This integration will allows transforming the wastes from breweries into valuable biomass and bioproducts, thus not only reducing the environmental impact of breweries activities but also recovering nutrients contained on these wastes, and producing valuable compounds.

To achieve this goal the next major steps are considered: (1) characterization of wastes and development of adequate methods to use it into microalgae cultures, (2) to determine the optimal strains to be used, (3) to optimize the production of biomass and depuration of wastes under laboratory conditions, (4) to develop a biorefinery concept to use the produced microalgae biomass, and (5) to demonstrate and evaluate the process at pilot scale.

This system will bring valuable information about the economics of the process and the feasibility of this type of processes for the final production of valuable biomolecules such as pigments, antioxidants, polysaccharides and proteins using the proposed raw material. This project is intended to put together the knowledge and experience of four biotech institutions with expertise in bioprocess engineering, microalgae biotechnology and in vitro cell cultures to produce in a very innovative manner highly valuable biomass using a new source of nutrients unused and underestimated at the moment in beer industry. As a result of this effort, we expect to contribute in the development of a waste to product biorefinery technology flexible and customizable enough to be used at different breweries according to the local needs and possibilities.

Thematic field: Bioeconomy / Energy

Project acronym:	CelluloseSynThech
Project full title:	Integrated valorization of lignocellulosic agroindustrial waste to furan based building blocks
Topic:	Small scale self-sustainable biorefineries
Total project costs:	487.765 €
Project duration (months):	36
Project Coordinator:	FARMlD Associação da Faculdade de Farmácia para a investigação e Desenvolvimento, Portugal Professor Dr. Carlos Alberto Mateu Alfonso, mail: carlosafonso@ff.ul.pt

Project Partners

Country	Institute	Name
Argentina	Centro de Investigación y Desarrollo en Ciencias Aplicadas, Dr. Jorge Ronco, CINDECA, dependent of CONICET (Consejo Nacional de Investigaciones Científicas, Argentina and Universidad Nacional de La Plata)	Prof. Dr. Gustavo Romanelli
France	Université Pierre et Marie Curie	Prof. Dr. Giovanni Poli
Colombia	Universidad Pedagógica y Tecnológica de Colombia	Prof. Dr. José Jobanny Martínez Zambrano

Project Summary

Our planet's fossil raw materials are irreversibly diminishing, and the progressive switch of chemical industry to renewable feedstock appears as an unavoidable requirement. Although the chemical community starts being aware of the above problem, production of organic chemicals from renewable feedstock is at the moment far from being technically optimized.

Biomass is significantly more multifaceted than fossil raw materials, and constitutes a complex blend of low and high molecular weight products. Furfural (F), readily obtained by cyclodehydration of naturallyoccuring pentosans, appears to be the only unsaturated largevolume organic chemical prepared from biomass. In this line, the furan analog 5 (hydroxymethyl)furfural (HMF) derived from hexoses is considered to be one promising biorenewable building block for the production of polymer monomers and other chemical commodities.

This proposal aims to build an integrated platform for the valorization of lignocellulosic agroindustrial waste to furan based building blocks via the discovery of efficient transformation of pentoses (mainly xylose) and hexoses (mainly glucose) to furfural, HMF, and HMF analogs by more efficient and competitive catalyzed technologies. In addition, new advanced furanbased intermediates will be developed, to create more structurally complex target molecules.

Thematic field: Bioeconomy / Energy

Project acronym:	SMIBIO
Project full title:	Development of modular small-scale integrated biorefineries to produce an optimal range of bioproducts from a variety of rural agricultural and groindustrial resudues / wastes with a minimum consumption of fossile energy
Topic:	Small scale self-sustainable biorefineries
Total project costs:	1.094.871 €
Project duration (months):	36
Project Coordinator:	Laboratório Nacional de Energia e Geologia, Portugal Dr Francisco Gírio, mail: francisco.girio@lneg.pt

Project Partners

Country	Institute	Name
Spain	Centro de Investigaciones Energéticas Mediaombientales y Tecnológicas	Dr. Mercedes Ballesteros
Colombia	UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES	Professor Carlos Ariel Cardona Alzate
Mexico	UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO	Dr. Alfredo Martinez
Chile	PONTIFICIA UNIVERSIDAD CATOLICA DE VALAPARSIO	Prof. German Aroca
Germany	Wirtschaft und Infrastruktur GmbH & Co Planungs KG	Dr. Rainer Janssen
Portugal	Cooperativa Agrícola do Vale de Arraiolos CRL	Ing João Amaral Neto
Colombia	Colsnacks Fritos y Precocidos de Colombia	Dr. Aurentino Molina Zoto
Colombia	Federación Nacional de Cafeteros de Colombia	Dr. Carlos Eduardo Osorio
Argentina	Instituto Nacional de Tecnologia Agropecuaria	M.Sc. Agr. Ing. Hilbert Jorge Antonio
Portugal	STRADALUX SYSTEMS LDA	Dr. Iracema Stramota

Project Summary

The aim of this project is to study technicaleconomic and environmental viability of small scale integrated biorefinery units capable of processing different kinds of biomass produced in short radius catchments rural and small urban areas, both in Europe and in CELAC.

Two different biorefinery platforms will be simulated under a wide range of dry and wet feedstocks: Lignocellulosic biorefinery for ethanol, sugars and lignin for further biological/chemical conversion and wet biomass for biogas through anaerobic digestion. The synergies of combining both platforms will be evaluated. The project shall develop appropriate general tools and methods to properly assess and optimize the technoeconomic viability (IRR, NPV and production costs) in a sustainable environmental assessment (LCA) including the social impacts (improvement in living conditions, job creation and new opportunities for rural development identification) for any smallscale integrated biorefinery. These economical and sustainability impacts will be validated for different real business case studies both in EU and LAC regions.

Thematic field: Bioeconomy / Energy

Project acronym:	SUMO
Project full title:	Sustainable Use of bioMass from Oleaginous processing
Topic:	Small scale self-sustainable biorefineries
Total project costs:	878.032,00 €
Project duration (months):	24
Project Coordinator:	Azti Tecnalia, Spain PhD Carlos Bald, mail: cbald@azti.es

Project Partners

Country	Institute	Name
Chile	Centro de Estudios en Alimentos Procesados	PhD Oscar Iván Candia
Portugal	Centre for Waste Valorisation	PhD Joana Carvalho
Germany	Institut für Lebensmittel und Umweltforschung e.V. (Institute for Food and Environmental Research)	Msc. János Petrusán
Uruguay	National Agricultural and Livestock Research Institute	PhD Roberto Zoppolo
Argentina	National Institute of Industrial Technology	Mabel Fabro

Project Summary

The aim of the SUMO project, Sustainable Use of bioMass from Oleaginous processing, is to develop different but complementary valorisation routes for the sustainable use of the main oily seeds processing byproducts. The general expected result is the design of several alternatives of biorefinery units adaptable to the current biomass processing and consumption sites in the participating Countries, where the oil seed processing sector is very important. The alternatives will be enough flexible to process vegetable processing byproducts and finding synergies with other complementary wastes generated in the nearby. The valorisation routes to be developed comprise the use of the biomass and its components in human consumption, feed, biofuels and energy.

Thematic field: Bioeconomy

Project acronym:	SCREAM
Project full title:	Screening marine microalgae and terrestrial bacteria; in search of novel compounds of potential medicinal and other industrial values
Topic:	Screening bioactive metabolites & enzymes
Total project costs:	1.212.500 €
Project duration (months):	36
Project Coordinator:	Norwegian Institute for Agricultural and Environmental Research, Norway Dr. Carl Spetz, mail: carl.spetzl@bioforsk.no

Project Partners

Country	Institute	Name
Chile / Germany	Fraunhofer Chile Research / Fraunhofer Association	Ing, MBA Lothar Driller
Romania	SC PROPLANTA SRL	Prof.Dr. Carmen Socaciu
Peru	Universidad Peruana Cayetano Heredia	MD PhD Rosario Rojas

Project Summary

The Norwegian Institute for Agricultural and Environmental ResearchBioforsk, the Fraunhofer Chile Research, SC ROPLANTA SR Romania and the Universidad Peruana Cayetano Heredia (Peru)UPCH have joined forces to develop a transnational longterm research cooperation platform within the EULatin America Programme under the project proposal umbrella: “Screening microalgae and bacteria; in search of novel compounds of potential medicinal and other industrial values SCREAM”.

SCREAM targets a high impact scientific area, biodiscovery and the exploitation of marine microalgae and terrestrial bacteria as renewable sources of natural bioactive and functional components, by using a multidisciplinary approach. This includes, but is not exclusive to, microbiology including microalgae and bacteria technology, state of the art ‘omis (metabolomics/proteomics), stress physiology, product testing and development and economic assessment. Microalgae species will include Antarctic, Arctic and other Nordic species, bacteria species will include terrestrial acidophilic and acid tolerant species.

The novelty of SCREAM derives from a number of original and innovative activities that will undoubtedly lead to a number of innovations within cancer research and functional food with the potential for further exploitation. By selecting microalgae as our main focus, SCREAM takes steps towards the future, targeting functional food products, not only for the healthy ingredients supplied by the microalgae, but also avoiding use of overexploited agricultural fields. Furthermore, the potential for adjuvants from microalgae and/or bacteria in anticancer treatment and affecting tumour cell invasion and metastasis to improve longterm therapeutic success of conventional anticancer agent by decreasing the possibility of chemoresistance is promising.

SCREAM will be looking for:

- Adjuvants from marine microalgae and terrestrial bacteria in anticancer treatment affecting tumour cell invasion and metastasis,
- microalgae metabolites as food ingredients.

Thematic field: Biodiversity

Project acronym:	AMAZONFISH
Project full title:	Amazonian fishes and climate change
Topic:	Biodiversity assessment and monitoring
Total project costs:	621.458 €
Project duration (months):	36
Project Coordinator:	Institut de Recherche pour le Développement Dr. Thierry Oberdorff, mail: thierry.oberdorff@ird.fr

Project Partners

Country	Institute	Name
Colombia	Pontificia Universidad Javeriana	Dr. Javier A. Maldonado Ocampo
Belgium	Royal Belgian Institute of Natural Sciences (Registed in ECAS as: Institut royal des Sciences naturelles de Belgique)	Prof. Koenraad Martens
Peru	Universidad Nacional Mayor de San Marcos	Prof. Hernan Ortega Torres

Project Summary

The project aims to build a high quality freshwater fish biodiversity database for the entire Amazon drainage basin. This will be done by mobilizing and integrating information available in published articles, books, gray literature, online databases, foreign and national museums and universities and by checking for systematic reliability and consistency for each species recorded.

For each record, the distribution and current status (valid species name or synonym) will be reviewed using as nomenclature authority file the California Academy of Science's Catalog of Fishes CAS. Sampling gaps will be identified and field studies organized to fill, as far as possible, those gaps to get the most uptodate and comprehensive coverage available for freshwater fish species distributions at the Amazon Basin scale. A Geographic Information System (GIS) will be associated to the biological database and all environmental factors meaningful in explaining fish species distribution will be calculated over a 0.5° x 0.5° grid (i.e. environmental factors related to geographical isolation, habitat diversity, contemporary climate).

A basinwide biogeographical analysis will be performed at the subbasin scale using species richness, endemism and beta diversity descriptors. This will allow defining degrees of irreplaceability and representativeness of the different subbasins (i.e. "hotspots"). Future climate projections under the four scenarios for years 2050 and 2080 will be further derived from the most commonly used ultimate GCMs and consequent shifts in species range distribution and species extinction rates will be evaluated.

Thematic field: Biodiversity

Project acronym:	CAVICE
Project full title:	Cave ice microbiom: metabolic diversity and activity in response to climate dynamics and anthropogenic pollution
Topic:	Biodiversity assessment and monitoring
Total project costs:	702.999 €
Project duration (months):	36
	Project Coordinator: Institute of Biology Bucharest
	Dr. Cristina Purcarea, mail: cristina.purcarea@ibiol.ro

Project Partners

Country	Institute	Name
Argentina	National Scientific and Technical Research Council	Dr. Maria E. Farias
Romania	Emil Racovita Institute of Speleology	Dr. Alexandra M. Hillebrand Voiculescu
Chile	University of Antofagasta, Facultad de Ciencias del Mar y Recursos Biológicos	Dr. Cristina Dorador
Norway	University of Bergen	Prof. Lise Øvreås

Project Summary

Glacial environments including Polar regions, frozen lakes, mountain glaciers, and upper atmosphere, are currently the focus of intense research due to their recognized vulnerability to climate change and the increased interest in psychrophilic microorganisms (due to their great biotechnological potential). Contrary to these well studies icy environments, there is only limited information available on ice microbiota from ice caves (i.e., perennial ice accumulations in rockhosted caves). These highly preserved and relatively unexposed ice environments constitute archives for studying the impact of climate and anthropogenic pollution on the diversity of the iceembedded microbial communities as well as on their metabolic activity.

While studies on structural diversity were partially carried out on this type of habitat, both functional diversity and microbial productivity of this ecosystem are still unexplored. Our proposal represents the first investigation of metabolic diversity and activity of microbial communities from a cave ice environment, to reveal the identities and functions of the key players in this ecosystem, using metagenomic and metatranscriptomic Next Generation Sequencing. The project emphasis on a comparative study of total and active microbial communities from ice caves of different climate and pollution exposures, in order to understand the microbial diversity and metabolism in this preserved environment, and to establish a chronosequence model reflecting the impact of both climate and environmental pollution on cave ice microcosm. The selected ecosystems represent perennial ice blocks harboured in limestone caves located in Romania (Scarisoara Ice Cave, SC), and Norway (Svarthamar Ice Cave, SV), and in glacier caves located at the rockice interface under glaciers in Argentina (Viedma Glacier caves, VD) and Chile (Mylodon cave, MY).

Our proposal focuses on the *metagenomic and metatranscriptomic* reconstitution of total and active microbial community present in different aged ice strata throughout the caves' ice block. This functional synopsis will be analyzed in relation with the chemical composition of ice deposits reflecting contamination due to anthropological activities and climate dynamics, and variations due to ice formation origin and geographical locations, to identify putative corresponding biomarkers for these glacial ecosystems. The results of this proposal will contribute not only to unraveling the microbial activity of an unstudied type of habitat, but also to investigate the effect of climate variations and environment pollution on such natural monuments leading to better management of the sites and to their more efficient protection and conservation. In addition, screening for microorganisms of high bionanotechnological potential will focus on isolation and characterization of novel metal nanoparticle synthesizing psychrophilic and psychrotolerant strains, enlarging the applicative potential of icecontained microcosm. This joint research project will create longterm partnerships between the European and Latin American Universities and Research Institutes that will contribute to strengthening our research capacity through interlaboratory exchanges, and creating a dynamics in earlystage research training. The expected results will constitute a consolidated starting point for further joint applications treating fundamental and applicative aspects of cryosphere microcosm, focused on ecosystem responses to changing environmental conditions and cave icederived products valorization in nanotechnologies.

Thematic field: Biodiversity

Project acronym:	METHANOBASE
Project full title:	METHAnogenic Biodiversity and activity in Arctic and Subantarctic Ecosystems affected by climate change
Topic:	Biodiversity assessment and monitoring
Total project costs:	976.725,00 €
Project duration (months):	36
Project Coordinator:	Laboratory of Functional Ecology and Environment, France Dr Maialen Barret , mail: maialen.barret@ensat.fr

Project Partners

Country	Institute	Name
Uruguay	Instituto de Investigaciones Biológicas Clemente Estable	Dr Claudia Etchebehere
Chile	Pontificia Universidad Católica de Valparaíso	Dr Léa Cabrol
Belgium	Royal Belgian Institute for Natural Sciences	Dr. Anton Van de Putte
Norway	UiT The Arctic University of Norway	Prof Mette Marianne Svenning
Chile	University of Magallanes	Dr Frédéric Thalasso
Russia	P.I. Melnikov Permafrost Institute, Siberian Branch of the Russian Academy of Sciences	Dr. Nikita Tananaev
USA	University of Alaska Fairbanks	Dr Gilberto Fochesatto

Project Summary

Methane emissions from aquatic and terrestrial ecosystems play a crucial role in global warming, which is affecting highlatitude ecosystems in particular. As major contributors to methane emissions in natural environments, the **microbial communities** involved in methane production and oxidation deserve a special attention. Microbial diversity and activity are expected to be strongly affected by the already observed (and further predicted) temperature increase in highlatitude ecosystems, eventually resulting in disrupted feedback methane emissions.

The **METHABASE** project has been designed to investigate the intricate relations between microbial diversity and methane emissions in Arctic, Subarctic and Subantarctic ecosystems, under natural (baseline) conditions and in response to simulated temperature increments. To achieve this highly challenging purpose, the METHABASE project relies on the use of state-of-the-art molecular tools and on a pluridisciplinary team including experts from Europe (France, Belgium, Norway) and South America (Chile, Uruguay), as well as local partners in Siberia (Russia), Alaska (USA) and Patagonia (Chile) for field expedition support.

Thematic field: Energy

Project acronym:	INDuGRID
Project full title:	Efficient energy management in industrial microgrids with high penetration of PV technology
Topic:	Towards Zero Carbon Energy Systems
Total project costs:	945.464,00 €
Project duration (months):	36
Project Coordinator:	Universidad Politécnica de Cataluña, Spain Dr. Miguel Castilla, mail: miquel.castilla@upc.edu

Project Partners

Country	Institute	Name
Portugal	INESC Technology and Science	Dr. Carlos Moreira
Portugal	Instituto Politécnico de Tomar	Dr. Mário Gomes
Argentina	Universidad Nacional de San Juan Consejo	Pedro Enrique Mercado
Peru	WAIRA ENERGIA SAC	Ing Franco Canziani Amico

Project Summary

The **main objective of this proposal** is the introduction of innovative solutions to the improvement of energy efficiency in industrial environments by the use of intelligent electrical microgrids with high penetration of PV technology. The **expected results** of the proposal are:

1) A systematic approach that facilitate the design of industrial microgrids including the dimensioning of the main power components and the communication and metering infrastructures.

2) A high performance energy management system that guarantees zero net energy industries with high penetration of PV technologies and energy storage systems.

3) A multimaster control scheme to increase reliability in autonomous industrial microgrids.

4) Several control algorithms to improve the power quality (amplitude deviation, voltage imbalance, harmonics) in industrial microgrids.

The theoretical results will be tested and validated experimentally in the microgrid laboratory of INESCTEC Porto, one of the partness of the INDuGRID project.

Thematic field: Energy

Project acronym:	WINNER
Project full title:	SMART WINDOWS FOR ZERO CARBON ENERGY BUILDINGS
Topic:	Towards Zero Carbon Energy Systems
Total project costs:	561.703,50 €
Project duration (months):	24
Project Coordinator:	Fundación PRODINTEC, Spain Dr. Paula Sánchez Friera, mail: pss@prodintec.com

Project Partners

Country	Institute	Name
Portugal	Centre for Nanotechnology and Smart Materials	MsC João Gomes
Chile	Universidad del Bío Bío	Dr. Jimena Alarcón Castro
Dominican Republic	rsidad Nacional Evangélic	MsC Carlos García

Project Summary

The project aims at developing an innovative BIPV system based on smart windows, which could represent a powerful tool for achieving the increasing demand for zero energy buildings. By introducing suitable anoparticles on façade surfaces (in particular, windows) receiving direct sunlight it is possible to build luminescent solar concentrators, which, on one hand, downshift the solar spectrum towards the range where the solar cells have an optimal response, and, on the other hand, are able to redirect part of the incident light to the windowpane perimeter, therefore reducing the amount of radiation on the surface and contributing to the smart climatization of the building.

Optimal processes for the integration of these materials on the window pane surfaces will be developed. The system will be designed for optimal climatization of buildings combined with electricity selfgeneration. The project could thus have a large impact towards meeting the international goals on sustainability and low carbon economy specifically for urban areas.

The main objectives of this project will be:

- Selection / synthesis of suitable nanoparticles for light trapping
- Optimization of coating / integration on window panes
- Design of smart window system with integrated PV
- Prototype fabrication
- Product testing and validation, including performance and durability compliant with relevant standards
- Lifecycle, energy balance and cost analysis

Thematic field: Health

Project acronym:	CAPRI-PC
Project full title:	Recognition of the primary infection by Pneumocystis in infants: a silent threat to public health
Topic:	Prevention infectious diseases & wellbeing
Total project costs:	581.126,00 €
Project duration (months):	36
Project Coordinator:	Instituto de Ciencias Biomédicas, Facultad de Medicina Universidad de Chile, Dr. Sergio L. Vargas, mail: vargas@med.uchile.cl

Project Partners

Country	Institute	Name
Germany	B & S Analytik GmbH	PhD Jörg Baumbach
Spain	Valencian Region Foundation for the Promotion of Health and Biomedical Research	Prof. Andres Moya
Spain	FISEV I /Instituto de Biomedicina de Sevilla	MD. PhD Enrique J. Calderón
France	University of Brest and University Hospital of Brest	Professor Gilles Nevez

Project Summary

Increasing evidence suggests that the most common respiratory infection affecting infants is the mild and stealth, primary infection by the microfungal organism *Pneumocystis.* This infection goes currently unrecognized and has been neglected as a subclinical irrelevant infection by contrast with the severe *Pneumocystis* pneumonia affecting the immunocompromised host. However, compelling new evidence suggests that this infection may be pathogenic to certain infant age groups and that microbiomehost interactions in early life may condition the development of altered immune responses in older infants or adults. They underscore the importance of understanding this highly prevalent subclinical *Pneumocystis* primary infection. This infection is acquired close to birth, develops over a period of few weeks, and peaks between the ages of 2 to 5 months.

Furthermore, this age interval period coincides with the peak of infant respiratory morbidity and postneonatal mortality, raising the hypothesis that a pathogenic role of *Pneumocystis* in infants is possible provided the nearuniversal prevalence of this infection at that particular age window. This hypothesis is strengthened by the recent demonstration of pathology consisting of increased mucus associated to *Pneumocystis* in infant lungs in line with observations in animal models from us and other research groups that show *Pneumocystis*associated transient respiratory impairment and airway remodelling. Importantly, *Pneumocystis* h a s b e e n detected in lung of aborted fetuses, wich may suggest vertical transmission and an eventual cofactor role in abortion and in newborn respiratory distress due to the demonstrated abiility of *Pneumocystis* to decrease pulmonary surfactant. Therefore this proposal aims to recognize the epidemiology of this silent infection in preterm and term otherwise healthy newborns and small infants in different countries, to recommend a preferred method for diagnosis by comparing senstivity of available methods of known specificity, to characterize the pulmonary mycomicrobiome
using metagenomic analyses, and additionally, to understand the *Pneumocystis* airway epithelium interaction using transcriptomic studies to identify the hostactivated gene responses associated to this unique fungal pathogen in infant lung specimens. The proposal will importantly explore *Pneumocystis*associated breathprints using noninvasive detection of volatile organic compounds (VOC) in exhaled air that may prove as an ideal method to recognize stealth infections especially in prematures and small infants. Recognition of the wide distribution of *Pneumocystis* epidemiology will be in itself a measure of success of this proposal and, furthermore, understanding this early life infant-microbial interaction may lead to prevent infant and, additionally, older age respiratory morbidity. Therefore results of this proposal will contribute to prevent infectiousrelated morbidity and promote well-being, by increasing our recognition and understanding of this early-life and highly frequent *Pneumocystis* primary infection.

Thematic field: Health

Project acronym:	Congenital Chagas disease research Consortium
Project full title:	RESEARCH IN PREVENTION OF CONGENITAL CHAGAS DISEASE: Parasitological, placental and immunological markers
Topic:	Prevention infectious diseases & wellbeing
Total project costs:	339.200,00 €
Project duration (months):	36
Project Coordinator:	Instituto de Investigaciones en Ingeniería Genética y Biología Molecular "Dr Héctor Torres", Argentina PhD Alejandro Schijman, Mail: ingebi@dna.uba.ar

Project Partners

Country	Institute	Name
Chile	Instituto de Ciencias Biomédicas	Prof. Norbel Galant
Spain	Universidad de Granada	Prof. Juan Pasquau Liaño
Belgium	Laboratoire de Parasitologie	Prof. Carine Truyens

Project Summary

Chagas disease, caused by the protozoan parasite *Trypanosoma cruzi*, is a devastating, but neglected, health problem in Latin America and, due to the extensive global migration of asymptomatic people, has become an emerging disease in nonendemic countries. According to WHO, development of new diagnostics is one of the top priorities for Chagas disease research.

The congenital transmission of *Trypanosoma cruzi* , which may occur in 5% of newborns to seropositive mothers is one of the major routes of spreading Chagas disease worldwide. Since 65% of patients with congenital Chagas are asymptomatics, prevention and control would require screening of children and women of childbearing age and their treatment. However, early detection of congenital infection is not adequate because current methods lack sensitivity and a high proportion of newborns abandon maternity services without diagnosis and thus they must be followed up for final diagnosis when congenital infection can be detected by serological assays only after nine months of age.

In most endemic regions, due to economic and social constrains, a high proportion of infants are lost during follow up remaining undiagnosed and thus untreated. Treatment closer to delivery is almost 100% effective and with fewer toxic side effects. In this context, studies to improve early diagnosis are a priority in public health. Furthermore, it is necessary to deepen insight on the mechanisms of vertical transmission to enable define risk factors. Accordingly, this project proposes to characterise parasitic, placental and immunological factors in clinical samples from binomials of seropositive women and their newborns to find out atrisk factors of transmission and validate novel laboratory tools for early diagnosis of congenital infection.

Thematic field: Health

Project acronym:	MYCONET2
Project full title:	Detecting drug resistant Mycobacterium tuberculosis with low-cost next generation technology
Topic:	Prevention infectious diseases & wellbeing
Total project costs:	547.822 € (*)
Project duration (months):	36
Project Coordinator:	Universidad Peruana Cayetano Heredia, Peru **P**rof. Mirko Zimic, Mail: mirko.zimic@upch.pe

(*) Final figure pending on confirmation

Project Partners

Country	Institute	Name
Argentina	Instituto de Investigaciones Fisicoquímicas Teóricas y Aplicadas	Dr. Diego Pallarola
Spain	FundeSalud (Fundación para la Formación e Investigación de los Profesionales de la Salud de Extremadura)	Dr. Jonathan Gómez Raja
Germany	Leibniz Institute of Photonic Technology	Dr. Dana CiallaMay
Peru	Universidad Peruana de Ciencias Aplicadas	Prof. Luis Milon Mayer
Germany	InfectoGnostics Research Campus	Dr. Jens Hellwage

Project Summary

Tuberculosis (TB) is a devastating disease affecting millions of people around the globe and second only to HIV/AIDS as the greatest killer worldwide due to a single infectious agent. The increasing appearance of multidrugresistant (MDR) strains worsens the threat to human kind with unprecedented risks. A quick diagnostic and drug-resistance-identification solution would significantly increase the chance of early and appropriate therapy. Within the MYCONET ² project, scientists from South America and Europe join forces to synergistically develop novel and efficient tools to fight tuberculosis. Screening methods for early diagnostics and detection of pyrazinamide (PZA) resistance will be developed, using stateofart nanotechnology, Raman spectroscopy, LabonaChip devices, genomics, high throughput sequencing, and bioinformatics.

The consortium combines unique knowledge on pathogen distribution and resistance mechanisms, which will help to find factors critical for improved intervention strategies. Initiated by ERANetLAC, the Network of the European Union (EU) and the Community of Latin American and Caribbean States (CELAC) on Joint Innovation and Research Activities, the MYCONET ² project helps to strengthen the bioregional partnership in Science, Technology and Innovation by planning and implementing concrete joint activities and will have a longlasting effect on strengthening scientific and cultural ties between South American and European institutions.