



BIOASTER, bioMérieux, ESPCI, GSK, Hospices Civils de Lyon and Sanofi join forces against sepsis

Lyon (France) – October 10, 2016 – BIOASTER, the French accelerator of microbiology technology innovation, bioMérieux, ESPCI (College of Physics and Industrial Chemistry of the city of Paris), GSK, the Hospices Civils de Lyon (HCL) and Sanofi announce that they are combining their expertise to fight against sepsis within REALISM (REAnimation Low Immune Status Markers), a research program conducted inside BIOASTER and the joint research laboratory HCL-bioMérieux, whose goal is to identify and validate new biomarkers for improving care of patients presenting with a high risk of sepsis.

Carried out close to patients, this highly original collaboration between public and private research combines medical expertise, academic research as well as diagnostic and pharmaceutical innovation. Hosted inside BIOASTER, the REALISM project represents more than 8 million euros and gathers more than 50 researchers, clinicians, engineers, technicians and statisticians. On completion of the project, end of 2018, the results will enable the industrial partners to develop diagnostic and therapeutic solutions to fight sepsis.

Sepsis is a severe infection in which the inflammatory host response leads to life-threatening organ dysfunction. Around 27 million people in the world are affected by sepsis each year. In its most severe form, septic shock, there is 30% mortality. Making a diagnosis as fast as possible and defining the immune profile of the patients represents a major need for clinicians.

Recent scientific advances led to an understanding that a large number of patients hospitalized in intensive care units develop changes of their immune system associated with a high risk of developing a serious infection during their stay in hospital. These include patients admitted with septic shock or after a surgical operation, multiple traumatic injuries or a severe burn. The objective of the REALISM project is to validate new predictive tests allowing diagnosis and monitoring of the inflammatory and immunosuppression status in order to implement a personalized diagnostic and treatment strategy to prevent patients from developing sepsis. Personalizing patient management will reduce the risks of infectious complications and increase the patients' chances of survival. This will also contribute to the fight against antimicrobial resistance: fewer infections will lead to less antibiotic prescriptions.

Initially launched in 2014 by BIOASTER, bioMérieux, ESPCI, the HCL and Sanofi, based on the research work carried out by bioMérieux and the HCL within their joint research laboratory located within the Edouard Herriot Hospital in Lyon (France), this partnership was strengthened in September 2016 with the arrival of GSK and the vaccine division of Sanofi. This collaboration between two world leaders of the pharmaceutical industry and the leader of *in vitro* diagnostics, confers to this research program a particularly innovative dimension to fight sepsis, a major public health challenge.

“This collaborative project joining the forces of two pharmaceutical partners and major players in the fields of clinical and technological research, engaged in the diagnosis and treatment of sepsis, as well as the prevention of related acquired infections, is the exemplification of BIOASTER ambition: to synergize the resources and to accelerate the innovation and solution generation, through collaborative projects with multiple partners. We are very proud to be part of this exciting project that will, no doubt generate new avenues in the field of sepsis,” said Nathalie Garçon, CEO & CSO of BIOASTER.

“The REALISM research program is an illustration of the long-standing commitment of bioMérieux, world leader in microbiology, in the field of sepsis, and is very important for us as part of our strategy to continuously increase the medical value of our diagnostic solutions,” said Mark Miller, Chief Medical Officer of bioMérieux. *“Such an innovative collaboration, with hospital, academic and pharmaceutical partners, and carried out in France, a country renowned for its expertise in infectious diseases, will allow us to identify new biomarkers for an early diagnosis of sepsis and target a more personalized treatment, contributing to better sepsis management and improved patient outcomes.”*

“ESPCI Paris, with its expertise in droplet-based microfluidic systems, will make the bridge between technological development and clinical research. The integration of microfluidic technology with immunological assays through the REALISM project will result in an innovative system capable of single-cell analysis of clinical samples in a relevant time frame compatible with daily clinical practice,” said Prof Andrew GRIFFITHS, director of the biochemistry laboratory, ESPCI Paris.

Pete Gough, Vice President and Head of the Host Defense Discovery Performance Unit at GSK, said: *“It is becoming increasingly clear that immunosuppression is a fundamental driver of mortality in patients with sepsis and other critical illnesses. A major challenge in translating this exciting new science to novel therapeutics will be finding robust biomarkers to personalize the treatment for individual patients. The REALISM research program is focused on addressing this challenge and a program of this size and complexity can only be achieved through collaborative, public-private partnerships like the REALISM consortium, and it is very exciting for GSK to be involved.”*

“The REALISM research program acts as a channel for continuous exchange between patient care, upstream, translational and clinical research, which enriches all stakeholders and ultimately contributes to better care and cure for our patients,” says Muriel Malbezin, Director of Clinical Research and Innovation, Hospices Civils de Lyon.

Laurent Fraisse Vice-president Infectious Diseases in Sanofi said: *“The ambitious REALISM research program will permit us to better understand the physiopathology of ICU acquired-immuno-depression and its heterogeneity in patients. The discovery of new host-related biomarkers will give the opportunity to identify new targets and potential innovative therapeutics to prevent and treat opportunistic infections with bad outcomes. This is a very nice example of a public-private collaboration between key actors in this medical field; we will join our strengths and expertises to answer critical patients’ needs.”*

About BIOASTER

BIOASTER is a Technology Research Institute – TRI –, the only TRI in France in the field of health. Created in 2012, BIOASTER is a new model for technology innovation in microbiology and infectious diseases.

Its mission is to lead innovative and ambitious collaborative projects, with and for public and private partners, to the patient benefit.

BIOASTER:

- Conceives and develops new innovative and high value technology solutions, in microbiology and infectious diseases.
- Promotes agility as a way of working: to better meet industries expectations and to answer to innovation financial constraints.

Key figures:

- 7 interconnected state of the art technology units to serve 4 major programs: diagnostics / vaccines / antimicrobials / microbiota.
- 2800m² laboratories P2 & P3 (LYON & PARIS).
- 120 people, including 80% of scientific experts, 18 different citizenships.
- 40 projects including 19 with private partners 17 with public partners and 10 international projects.

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About bioMérieux

Pioneering diagnostics

A world leader in the field of *in vitro* diagnostics for 50 years, bioMérieux is present in more than 150 countries through 42 subsidiaries and a large network of distributors. In 2015, revenues reached €1,965 million with 90% of sales outside of France.

bioMérieux provides diagnostic solutions (reagents, instruments, software) which determine the source of disease and contamination to improve patient health and ensure consumer safety. Its products are mainly used for diagnosing infectious diseases. They are also used for detecting microorganisms in agri-food, pharmaceutical and cosmetic products. bioMérieux is listed on the Euronext Paris stock market (Symbol: BIM – ISIN: FR0010096479). Corporate website: www.biomerieux.com.

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About ESPCI

Ever since it was founded in 1882, ESPCI Paris has been gaining in prestige and status. Evolving from a municipal school established to train industrial production managers, it has achieved the status of a major Institute of higher education in science and engineering. Featuring 9 joint research units (UMR), ESPCI Paris is recognized worldwide for its excellence in fundamental and applied researches, generating innovations for the industry. The five Nobel Prize winners associated with the School - Pierre Curie, Marie Curie, Frédéric Joliot-Curie, Pierre-Gilles de Gennes, and Georges Charpak - are emblematic of the exceptional ethos embodied in the permanent culture of excellence.

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About GSK

GSK – one of the world's leading research-based pharmaceutical and healthcare companies – is committed to improving the quality of human life by enabling people to do more, feel better and live longer. For further information, please visit www.gsk.com.

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About Hospices Civils de Lyon

Les Hospices Civils de Lyon sont un établissement public et le deuxième Centre Hospitalier Universitaire de France (CHU). Véritable centre de compétences intégrant toutes les disciplines, ils disposent d'une large palette de moyens humains, techniques et logistiques pour assurer leurs missions de soins, d'enseignement, de recherche et d'innovation médicale, de prévention et d'éducation pour la santé. Plus de 22 000 professionnels, dotés des équipements les plus avancés, se consacrent quotidiennement à leur mission : contribuer à l'amélioration constante de la santé.

Les Hospices Civils de Lyon regroupent aujourd'hui 14 établissements pluridisciplinaires ou spécialisés qui assurent de larges missions.

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About Sanofi

Sanofi, a global healthcare leader, discovers, develops and distributes therapeutic solutions focused on patients' needs. Sanofi is organized into five global business units: Diabetes and Cardiovascular, General Medicines and Emerging Markets, Sanofi Genzyme, Sanofi Pasteur and Merial. Sanofi is listed in Paris (EURONEXT: [SAN](http://www.sanofi.com)) and in New York (NYSE: [SNY](http://www.sanofi.com)).

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