



Paris, 03 March 2014

Press release

Europe is joining forces against neglected parasitic diseases

The international consortium A-PARADDISE (Anti-Parasitic Drug Discovery in Epigenetics), coordinated by Inserm, has just obtained funds of €6 million from the European Commission to conduct large-scale testing of innovative therapies against four neglected parasitic diseases: schistosomiasis, leishmaniasis, Chagas disease and malaria. The researchers have a common objective: to develop new drugs against the parasites that cause these diseases. The project involves 10 European partners, 5 Brazilian partners (who operate in the region where the diseases are endemic) and 2 Australian partners. They will all be meeting on 17 and 18 March at the Institute of Genetics and Molecular and Cellular Biology (Inserm / CNRS / University of Strasbourg Joint Research Unit), to get the project started.

Schistosomiasis, leishmaniasis, Chagas disease and malaria are regarded as neglected diseases because the effort and funds put into developing new treatment and control methods have not been commensurate with their catastrophic human impact. They affect people in developing countries, essentially in Africa, the Middle East, South America and eastern Asia, in tropical and sub-tropical regions. Around one billion people are regularly exposed to these diseases, which cause almost one million deaths every year.

At present, there is no vaccine against these parasites. Furthermore, the efficacy of existing treatments is limited, either by the side effects or by the current or potential development of resistance. Consequently, the A-PARADDISE consortium, which is coordinated by Inserm and headed by Raymond Pierce - Director of Research at the Centre for Infection and Immunity in Lille - is focusing on developing new drugs against these parasitoses.

The A-PARADDISE project will use a methodology that has already been tried and tested during a previous project of a similar scale ([SEtTReND](#)), which aimed to develop drugs against schistosomiasis. The researchers investigated **histone-modifying enzymes (HME)**, which determine the structure of the parasite's chromosomes. It was demonstrated that some HME inhibitors induce cell death, which makes them toxic to this parasite. This research provided the proof of concept that HMEs act on the schistosomiasis parasite, and has led to the development of a bank of candidate compounds which can rapidly be tested against other human parasites.

Thanks to the new project A-PARADDISE, researchers will be able to put the basic principle into practice and build on it by creating a unique platform for testing anti-parasitic drugs targeting HMEs, with a view to incorporating them into a clinical development programme. The experimental method consists in physically and virtually testing the efficacy and the toxicity of the compounds, *in vitro* and *in vivo*.

The ultimate objective of the A-PARADDISE project is to provide several candidate treatments against the four parasites and to pave the way for clinical trials in the near future.

To ensure the success of the project, the participants were all selected for their high level of expertise in their respective fields: high-throughput screening, computer-aided screening, the production of recombinant proteins, next generation sequencing, phenotypic tests, toxicology and pharmacology.

For further information



A-PARADDISE: Anti-Parasitic Drug Discovery in Epigenetics
<http://a-paraddise.cebio.org/>

The A-PARADDISE project began on 1 February 2014 and will be backed by the European Union for three years (FP7, grant agreement no. 602080). It is coordinated by Inserm and includes 17 partners based in 5 European countries, Brazil and Australia:

Institut National de la Santé et de la Recherche Médicale, Group Avenir, Paris, France
Centre Européen de Recherche en Biologie et Médecine (CERBM*), France
Martin Luther Universität Halle- Wittenberg (MLU), Germany
Universidade Federal do Rio de Janeiro (UFRJ), Brazil
Universidade de Sao Paulo (USP), Brazil
Albert Ludwigs Universität Freiburg (ALU-FR), Germany
Fundação Oswaldo Cruz, Centro de Pesquisas René Rachou (Fiocruz), Brazil
Fundação Oswaldo Cruz, Instituto Carlos Chagas (Fiocruz), Brazil
Inserm Transfert SA (IT), France
KANCERA AB (KAN), Sweden
Adlego Biomedical AB (Adlego), Sweden
Griffith University (GU), Australia
University of Queensland (UQ), Australia
Università degli Studi di Roma La Sapienza (UNIROMA1), Italy
University of East Anglia (UEA), Great Britain
Fundação Arthur Bernardes - Universidade Federal de Viçosa (UFV), Brazil
Institut Pasteur Paris (IPP), France

* The CERBM is the European branch of the Institute of Genetics and Molecular and Cellular Biology (IGBMC, Inserm/CNRS/Université de Strasbourg)

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