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Targeting the Leishmania kinome for the development of novel anti-parasitic strategies

Fact Sheet

Project Information

LEISHDRUG

Grant agreement ID: 223414

[Project website](#) 

Project closed

Start date

1 October 2008

End date

31 March 2012



Funded under

Specific Programme "Cooperation": Health

Total cost

€ 4 491 633,00

EU contribution

€ 2 852 232,00

Coordinated by

INSTITUT PASTEUR

 France

This project is featured in...



Objective

Visceral leishmaniasis is caused by the protozoan parasites *Leishmania donovani* and *Leishmania infantum* and is a potentially fatal disease in endemic areas around the world. During the infectious cycle, *Leishmania* alternate between the insect promastigote stage and the vertebrate aflagellate amastigote stage that proliferates inside infected host macrophages provoking the pathology of the disease. This consortium uses a highly interdisciplinary approach to reveal *Leishmania* signaling molecules associated with amastigote virulence, with the major aim to exploit parasite-specific pathways for anti-leishmanial drug development. We use innovative drug screening concepts not applied previously on parasitic systems. We will utilize visual high-content screening to discover compounds capable to kill intracellular *Leishmania* amastigotes without deteriorating the host cell. This phenotype-based strategy relies on fluorescent parasites and macrophages as read-outs and will allow simultaneous assessment of anti-leishmanial activity and host cell toxicity under physiological conditions. We will apply a target-based strategy utilizing recombinant *Leishmania* protein kinases for inhibitor identification and structure-guided drug design. The identification of appropriate target kinases, with only limited homology to their mammalian counterparts will rely on in silico analysis by applying novel bioinformatic tools developed by consortium members, and in vitro assay based on their phospho-transferase activity towards recombinant *Leishmania* phospho-proteins. The major objectives of this proposal are (i) to screen small molecule and peptide libraries for hit compounds with leishmanicidal activity using phenotype- and target-based strategies, (ii) to identify anti-parasitic lead compounds and assess their pharmacokinetic profiles using cell-culture and experimental infection models for leishmaniasis, and (iii) to initiate lead optimization by structure-based drug design.

Fields of science (EuroSciVoc)

[medical and health sciences](#) > [basic medicine](#) > [pharmacology and pharmacy](#) > [drug discovery](#)

[medical and health sciences](#) > [basic medicine](#) > **[medicinal chemistry](#)**

[natural sciences](#) > [biological sciences](#) > [biochemistry](#) > [biomolecules](#) > **[proteins](#)**

[medical and health sciences](#) > [basic medicine](#) > **[pathology](#)**



Keywords

[Leishmania](#)

[drug screen](#)

[kinome](#)

[proteomics](#)

[target screen](#)

Programme(s)

[FP7-HEALTH - Specific Programme "Cooperation": Health](#)

Topic(s)

[HEALTH-2007-2.3.4-1 - Development of new tools to control infections due to parasites of the Trypanosomatidae family](#)

Call for proposal

FP7-HEALTH-2007-B

[See other projects for this call](#)

Funding Scheme

[CP-SICA - Collaborative project for specific cooperation actions dedicated to international cooperation partner countries \(SICA\)](#)

Coordinator



INSTITUT PASTEUR

EU contribution

€ 823 120,00

Total cost

No data

Address

RUE DU DOCTEUR ROUX 25-28
75724 Paris

 France 

Region

Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Participants (12)



INSTITUT PASTEUR KOREA

 South Korea

EU contribution

No data

Address

HAWOLGOK DONG, SEONGBUK GU 39-1
136 791 SEOUL 

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



INSTITUT PASTEUR DE TUNIS

 Tunisia

EU contribution

€ 90 180,00

Address

Place Pasteur 13
1002 Tunis 

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



INSTITUT PASTEUR DE MONTEVIDEO

 Uruguay

EU contribution

€ 81 888,00

Address

MATAOJO 2020
11400 MONTEVIDEO 

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY

 Israel

EU contribution

€ 255 720,00

Address

SENATE BUILDING TECHNION CITY

32000 Haifa 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE ROYAL CHARTER

 United Kingdom

EU contribution

€ 205 262,00

Address

KEPPEL STREET

WC1E 7HT London 

Region

London > Inner London — West > Camden and City of London

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



UNIVERSITA DEGLI STUDI DI ROMA TOR VERGATA

 Italy

EU contribution

€ 182 077,00

Address

VIA CRACOVIA 50

00133 Roma 

Region

Centro (IT) > Lazio > Roma

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS

 Spain

EU contribution

€ 241 287,00

Address

CALLE SERRANO 117

28006 Madrid 

Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



FUNDACIO CENTRE DE REGULACIO GENOMICA

 Spain

EU contribution

€ 229 162,00

Address

CARRER DOCTOR AIGUADER 88
08003 Barcelona 

Region

Este > Catalunya > Barcelona

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS

 France

EU contribution

€ 236 157,00

Address

RUE MICHEL ANGE 3
75794 Paris 

Region

Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



IP RESEARCH CONSULTING SASU

 France

EU contribution

€ 234 120,00

Address

QUAI DES DEUX PONTS 31
93160 NOISY LE GRAND 

Region

Ile-de-France > Ile-de-France > Seine-Saint-Denis

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



UNIVERSIDAD POMPEU FABRA

 Spain

EU contribution

€ 233 259,00

Address

PLACA DE LA MERCE, 10-12
08002 Barcelona 

Region

Este > Cataluña > Barcelona

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



TECHNISCHE UNIVERSITÄT BRAUNSCHWEIG

 Germany

EU contribution

€ 40 000,00

Address

UNIVERSITÄTSPLATZ 2

38106 Braunschweig 

Region

Niedersachsen > Braunschweig > Braunschweig, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data

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European Union, 2025