Home > Projects & Results > FP7 >

New AntiBacterials with Inhibitory activity on Aminoacyl-tRNA Synthetases

Content archived on 2024-06-18

New AntiBacterials with Inhibitory activity on Aminoacyl-tRNA Synthetases

Fact Sheet

Project Information

NABARSI

Grant agreement ID: 601725

Project closed

Start date
1 June 2013

End date
31 May 2016

Funded under
Specific Programme "Cooperation": Health

Total cost
€ 5 372 277,01

EU contribution
€ 4 102 157,50

Coordinated by
ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM
Netherlands

Objective

The NABARSI consortium will develop a cutting-edge drug discovery project to increase the antibacterial pipeline. The main goal of NABARSI is to find new chemical entities (NCEs) with antibacterial efficacy in animal models of multi-drug resistant (MDR) bacterial infection and to exploit the results through obtaining a co-development with industry. The NABARSI consortium consists of 5 partners: Omnia Molecular (Omnia, SME; Spain). InhibOx (SME, UK). Latvian Institute of Organic Synthesis (LIOS, Latvia), Leeds University (Leeds, UK) and Erasmus Medical Centre

(ErasmusMC, The Netherlands - Coordinator).
Antibacterial activity will be achieved through inhibition of essential aminoacyl-tRNA synthetases (aaRS). Individual aaRS are highly conserved across bacteria, enabling the discovery of broad-spectrum antibacterials. To reduce the likelihood of resistance, NABARSI will look for NCEs with inhibitory activity against multiple aaRS enzymes. InhibOx and LIOS will design NCEs by rational and fragment based drug discovery methods followed by synthetic structure optimization. To increase chemical diversity, virtual screening of large (>100 M) compound libraries available at InhibOx will be performed. Limitations of previous aaRS inhibitors will be overcome by novel approaches such as the In Omnia assay: activity of the compounds on pathogenic aaRS enzyme is measured inside a human cell, allowing rejection of compounds acting through human aaRS and identifying compounds that cross biological membranes. The expertise of Leeds in mode of action studies will be used at an early stage. Activity of the NCEs on clinical isolates of MDR strains available at ErasmusMC will be assessed. Resistance appearance frequency and mechanisms will also be assessed early by selection and characterization of resistant mutants by ErasmusMC and Leeds. A co-development agreement with pharmaceutical companies will be intensively sought with the aim of exploiting the NCEs upon finalisation of NABARSI.

Fields of science (EuroSciVoc)

medical and health sciences > basic medicine > pharmacology and pharmacy > **drug discovery**

natural sciences > biological sciences > microbiology > **bacteriology**

medical and health sciences > basic medicine > pharmacology and pharmacy > drug resistance > **multidrug resistance**

natural sciences > biological sciences > biochemistry > biomolecules > proteins > **enzymes**

Programme(s)

FP7-HEALTH - Specific Programme "Cooperation": Health

Topic(s)

HEALTH.2013.2.3.1-1 - Drugs and vaccines for infections that have developed or are at the risk of developing significant anti-microbial resistance

Call for proposal

FP7-HEALTH-2013-INNOVATION-2
See other projects for this call

Funding Scheme

CP-FP - Small or medium-scale focused research project

Coordinator

ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM

EU contribution

€ 615 368,86

Total cost

No data

Address

DR MOLEWATERPLEIN 40
3015 GD Rotterdam
Netherlands

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Participants (4)

OXFORD DRUG DESIGN LIMITED

United Kingdom

EU contribution

€ 1 025 999,00

Address

THE WALBROOK BUILDING 25 WALBROOK
EC4N 8AF LONDON

Region

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

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

LATVIJAS ORGANISKAS SINTEZES INSTITUTS

Latvia

EU contribution

€ 885 474,69

Address

AIZKRAUKLES 21
LV-1006 Riga

Activity type

Research Organisations

Links

Contact the organisation   Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

UNIVERSITY OF LEEDS

United Kingdom

EU contribution

€ 758 180,72

Address

WOODHOUSE LANE
LS2 9JT Leeds

Region

Yorkshire and the Humber > West Yorkshire > Leeds

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

OMNIA MOLECULAR S.L.

Spain

EU contribution

€ 817 134,23

Address

Calle JOSEP SAMITIER - PARC CIENTIFIC DE BARCELONA 1-5
08028 BARCELONA

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

Last update: 16 December 2021

Permalink: https://cordis.europa.eu/project/id/601725