TRANSLOCATION

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Research Areas

- Tool Development
- Basic Research

At a Glance

- Status: **Active Consortium**
- Year Launched: **2013**
- Initiating Organization: **Innovative Medicines Initiative**
- Initiator Type: **Government**
- Location: **Europe**

Abstract

As part of the European Innovative Medicines Initiative's antimicrobial resistance (AMR) program, New Drugs for Bad Bugs, TRANSLOCATION aims to increase the overall understanding of how to get antibiotics into multi-resistant Gram-negative bacteria and to stop the bacteria from ejecting the drug. TRANSLOCATION will develop guidelines for designing and developing new drugs to tackle antibiotic resistance and create an information center for pre-existing and ongoing antibacterial research data that will be used to establish best practices for future antibacterial drug discovery efforts.

Mission

The New Drugs for Bad Bugs program, administered by the European Innovative Medicines Initiative (IMI), aims to advance the development of new antimicrobials by sharing information and boosting research on improving the uptake (and decreasing the efflux) of antibiotics into Gram-negative bacteria, which is one of the greatest challenges facing drug discovery for Gram-negative pathogens.

The TRANSLOCATION consortium of this program focuses on discovering new information to improve the selection and optimization of promising molecules that can be used for novel antibiotic

drug discovery. The lack of progress in antibacterial drug discovery, especially against Gram-negative pathogens, is partly due to a lack of information about how potential drugs are able to get through the bacterial cell envelope and remain inside long enough to destroy it. Through this new research, TRANSLOCATION will generate knowledge that can be used in the development of new technologies for measuring the transport of molecules across the cell envelope into the bacteria, and for better understanding the mechanisms that bacteria use to flush out certain molecules before they can be effective. Experts will research the structures of porins, proteins which act as portals in the outer membrane of the bacteria for the transport of certain smaller molecules into and out of the bacteria..

Scientists from academia and industry will conduct a screening program to identify key proteins that are important in understanding bacteria’s ability to reject certain molecules.

This second key aspect of the project’s scope, learning from success and failure, requires broad knowledge and skill sets and a large body of data from multiple sources. The creation of a cross-project ND4BB information center and the development of the business model to support the sharing of data will offer the wider antibiotic research community the opportunity to have access to new data from the results of all projects under the IMI AMR program. TRANSLOCATION’s information center will be managed through its newly developed model for data sharing. The project team will coordinate the disclosure and combined analysis of previously confidential information, which is being provided primarily from participating EFPIA companies. Crucially, their data on historical successes and failures in antibacterial research and development allow a more streamlined approach to antimicrobial drug development and will help to speed up the drug discovery process by making it more efficient. Additionally, the TRANSLOCATION project will help coordinate the dissemination of information and knowledge from this and all other topics initiated under IMI’s ND4BB program.

In this project, a large number of small and previously separate research problems are combined, allowing for synergy and understanding of how antibiotics move in and out of cells on a new and innovative level. This collaboration will bring together the antibacterial know-how of industry and leading academics with expertise in microbiology, biophysics, and computational and structural biology to provide a holistic view of the problem and a novel approach to deliver advances in this challenging area. TRANSLOCATION will help close the gap between the burden of infections due to multidrug-resistant bacteria and the development of new antibiotics to tackle the problem.

Consortium History

2013 – Project start date (January)
2013 – Antimicrobial resistance projects sign memorandum of understanding to facilitate collaboration (December)
2014 – A comment piece about TRANSLOCATION by John Rex is published in Nature Reviews Microbiology (April)
2014 – TRANSLOCATION is spotlighted in Science Translational Medicine (April)

Structure & Governance

Coordinator
Robert A. Stavenger
Antibacterial Discovery
Infectious Disease Therapy Area Unit
GlaxoSmithKline, USA

Leader of the Managing Entity
Mathias Winterhalter
Professor of Biophysics
School of Engineering & Science
Jacobs University Bremen, Germany

Financing

This project is funded by the Innovative Medicines Initiative, a public-private partnership between the European Union (EU) and the European Federation of Pharmaceutical Industries and Associations (EFPIA), resources of which are composed of financial contribution from the EU Seventh Framework Programme and EFPIA companies' in-kind contribution. Large pharmaceutical companies participating in IMI projects do not receive IMI funding.

The IMI Intellectual Property (IP) Policy governs the IP regime of all projects funded by the IMI JU. To assist with specific IP queries, IMI has set up a dedicated IP Helpdesk that can be contacted by e-mailing IMI-IP-Helpdesk@imi.europa.eu. The IMI IP policy can be accessed at the following address: http://www.imi.europa.eu/sites/default/files/uploads/documents/imi-ipr-policy01august2007_en.pdf

Data Sharing

According to IMI's intellectual property policy, the participants undertake to disseminate the data as soon as reasonably practicable but not later than one (1) year after the termination or expiry of the project. The Project Agreement shall include a description of the material that must be disseminated in accordance with the IP Policy and referenced in the Grant Agreement. If the participants do not disseminate within such time periods without good reason, the Executive Office has the right to disseminate such results in a manner consistent with the Grant Agreement.

A general challenge in many areas of drug development is a lack of mechanisms through which investigators can share data, information, and experience from the development of both failed and successful drug candidates. This often leads to duplication of efforts, lost opportunities for synergy, and, ultimately, inefficiencies in the discovery and development process. Leaders in both industry and government realize that, given the large medical burden on society, this inefficiency is not acceptable in antibacterial R&D. Hence, a driving force in the ND4BB program overall will be an openness and sharing of data and information between companies and with the public sector. A common element in both COMBACTE and TRANSLOCATION and potential future projects under ND4BB, is to drive the sharing of data and knowledge to increase the probability of success in the development, thus accelerating the delivery of quality medicines to patients.

Homepage	http://www.nd4bb.eu/
Other website	http://www.imi.europa.eu/content/translocation

Points of Contact

Robert A. Stavenger
GlaxoSmithKline
Tel.: +1 610-917-7163
E-mail: Robert.A.Stavenger@gsk.com

Mathias Winterhalter
Jacobs University Bremen
Tel.: +49 421 200 3248

E-mail: m.winterhalter@jacobs-university.de

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