Common data resources to aid antibiotic drug discovery

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Public-Private collaboration with the shared goal of progressing the development of new medicines to treat or prevent resistant bacterial infections

<table>
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<th>Key Facts</th>
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<tr>
<td>9 PROJECTS</td>
<td>13 ANTIBACTERIAL PROGRAMMES</td>
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<td>98 PARTICIPANTS</td>
<td>18 COUNTRIES</td>
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www.amr-accelerator.eu
OBJECTIVES OF THE PROJECT

• Foster a wide-ranging series of projects that address many of the scientific challenges in AMR

• Progress a pipeline of potential medicines to treat patients with resistant bacterial infections
  - 10 preclinical candidates
  - 5 Phase II-ready assets
  - Phase II clinical trials
AMR TOPICS COVERED

**TUBERCULOSIS & NTM**

Accelerating scientific discoveries and advancing the R&D pipeline of new and innovative agents to treat TB and NTM lung disease.

**GRAM-NEGATIVES**

Advancing the R&D pipeline of new and innovative agents to address AMR in Gram-negative bacteria.

**CAPABILITY BUILDING**

Accelerating and validating scientific discoveries in AMR. Coordinating and supporting projects across the AMR Accelerator.
Guidelines, tools and infrastructure to support data and knowledge management
WHY WE NEED A GOOD DATA MANAGEMENT?

Flow of information across collaborating yet competing groups with churning membership

Flow across all social groups the individual, the lab, the project, the organisation, the community

Flow across all tech infra platforms, repositories, registries

Reduce Knowledge Loss

Knowledge Turning, Information Flow
Josh Sommer, Chordoma Foundation, 2011
Creation of Value from data and Metadata
WHAT DOES DATA MANAGEMENT INCLUDE?

Support data management needs across AMR Accelerator

Establishment of relevant IT infrastructure

Providing guidelines for FAIR principles
INFRASTRUCTURE OVERVIEW IN COMBINE
Define guidelines for data management across all the Accelerator projects

**DATA**

- GDPR

Standards, FAIR and GDPR support

**DATA MANAGERS**

Accelerator data management group for data management activities

**DATA STORAGE**

AMR Knowledge Space containing guidelines
Webinars to communicate and disseminate

WEBINAR
AMR Accelerator data management, setting up data workflows from electronic lab notebooks to performing cross study analyses

02 July 2020
4-5 pm CEST

This webinar will focus on practical aspects of setting up data management procedures in AMR accelerator projects. The first part will cover working with Excel templates using electronic lab notebooks. Templates for working with in-vivo data sets will be discussed for SPG and related studies (including AMR tea data). The second part will cover working with in-vivo data sets and the templates that have been established for animal level data sets. The final part will cover data integration in the COMBINE software and approaches to allow for integrating data from different experiments in the same study, as well as cross-study analysis.

For additional information and contact details, please visit www.amr-accelerator.eu or contact philip@imith.fraunhofer.de. In order to receive the calendar invite including the call in details, please register here.

WEBINAR
Tools for working with sensitive and clinical data in the AMR Accelerator: Ethics; templates and software infrastructure

28 January 2021
1-2 pm CET

This webinar will cover the use of knowledge management tools in the AMR Accelerator and how these can be used to both enhance data analytics workflows and also promote collaborations across projects and teams. To support these efforts, the AMR Data Management group has developed a set of data visualization tools based on the knowledge graph approach. Knowledge graphs have the capacity to visualize unstructured and structured data, resulting in higher data quality that is ideal for machine learning applications. The webinar will introduce the COMBINE software tool, which is the first prototype of the AMR data management tool. The webinar will provide an overview of the tool and demonstrate how it can be used to support data management across the AMR Accelerator projects. The new tool will be designed for the project teams and will support the identification of and engagement between subject matter experts within a community.

For additional information, please contact philip@imith.fraunhofer.de.

WEBINAR
Introduction to tools to help expertise sharing and collaboration in the AMR Accelerator community

25 May 2021
3-4 pm CET

This webinar will cover the use of knowledge management tools in the AMR Accelerator and how these can be used to both enhance data analytics workflows and also promote collaborations across projects and teams. To support these efforts, the AMR Data Management group has developed a set of data visualization tools based on the knowledge graph approach. Knowledge graphs have the capacity to visualize unstructured and structured data, resulting in higher data quality that is ideal for machine learning applications. The webinar will introduce the COMBINE software tool, which is the first prototype of the AMR data management tool. The webinar will provide an overview of the tool and demonstrate how it can be used to support data management across the AMR Accelerator projects. The new tool will be designed for the project teams and will support the identification of and engagement between subject matter experts within a community.

For additional information, please contact philip@imith.fraunhofer.de.
Knowledge Space

- Administration & Legal
- AMR Protocol Library
- COMBINE Guidelines & Templates
- Communication Champions
- Cross AMR Accelerator Meetings
- Presentations & Webinars
- Skills & Expertise
- Directory_AMR-Accelerator-Knowledge-Space.pdf

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Tools and resources

- Development of templates for standardized data collection
- Electronic lab notebook roll-out for new projects
- Identification of needs, surveys and feedbacks from data champions
- Upgrades to grit42 for working with *in vivo* and clinical data sets

Review meeting – March 29th 2022
Electronic laboratory notebooks

- Easy-to-use
  - Access controlled
  - Shared protocols
  - Port data to G42

- Consistent standards
  - In-vitro data templates
  - In-vivo data templates
  - Pre-clinical data templates
Data storage and analysis infrastructure

- Enterprise tool
- Data Schema
- Storage
- Query

- Ontologies linked to standards

- Individual animal / patient level analyses
Updated Ontology for antibacterial drug discovery

- Abstract number: EA71 Poster by Gadiya et al
- BioAssay Protocol Ontology (BPO) to aid standardization of unstructured protocol data
AMR Knowledge Graph

• Data resource is linked with controlled vocabularies aligned with FAIR principles

Information related to reference pathogens in AMR-KG
BE PART OF THE SOLUTION!

BESIDES CONTRIBUTING TO IMPROVING THE SUCCESS OF R&D EFFORTS ACROSS THE AMR COMMUNITY, YOU WILL ALSO:

- Share expertise
- Support our data quest
- Combine effort on common interests

Get an early preview of the results
Get more out of your data by making it FAIRifiable
Get involved in the analysis
Improve the overall data management process
Be connected with AMR experts from the IMI AMR Accelerator

For more information on the use of your data:
IMI-COMBINE@pei.de

CONTACT US

For more information on data protection or to initiate the data sharing process:
IMI-COMBINE@pei.de
Acknowledgement

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