

KU LEUVEN (KUL): KU LEUVEN BOF-IOF

RESEARCH DATA SUMMARY

				ONLY FOR DIGITAL DATA	ONLY FOR DIGITAL DATA	ONLY FOR DIGITAL DATA	ONLY FOR PHYSICAL DATA
Dataset Name	Description	New or Reused	Digital or Physical	Digital Data Type	Digital Data Format	Digital Data Volume (MB, GB, TB)	Physical Volume
<i>Staphylococcus aureus</i> strains	Collection of strains from the different partners of the consortium	<input type="checkbox"/> Generate new data <input checked="" type="checkbox"/> Reuse existing data	<input type="checkbox"/> Digital <input checked="" type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input type="checkbox"/> Images <input type="checkbox"/> Sound <input type="checkbox"/> Numerical <input type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:			Maximum 1 box stored at -80°C
<i>Staphylococcus aureus</i> phages (wildtype and engineered)	Collection of 4 phages previously characterized at KU Leuven	<input checked="" type="checkbox"/> Generate new data <input checked="" type="checkbox"/> Reuse existing data	<input type="checkbox"/> Digital <input checked="" type="checkbox"/> Physical				Maximum 1 box stored at 4°C
Phage-coated implant materials	Metallic, ceramic and plastic biomaterials with and without phage coating	<input checked="" type="checkbox"/> Generate new data	<input type="checkbox"/> Digital <input checked="" type="checkbox"/> Physical				Maximum 1 box stored at 4°C
Data on antibiofilm activity of phages and phage-coated biomaterials in bioreactor setup	Data on the antibiofilm activity of the phages and phage-coated biomaterials	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input checked="" type="checkbox"/> Images <input type="checkbox"/> Sound <input checked="" type="checkbox"/> Numerical <input checked="" type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.jpg .tiff .png .xls .csv	<input checked="" type="checkbox"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	
Data on the deposition of the phages on metallic biomaterials	Data generated by the Braem lab	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input checked="" type="checkbox"/> Images <input type="checkbox"/> Sound <input checked="" type="checkbox"/> Numerical <input checked="" type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.jpg .tiff .png .xls .csv	<input checked="" type="checkbox"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	

Peptide data	Data on what peptides bind to metallics, plastics and ceramics	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input type="checkbox"/> Images <input type="checkbox"/> Sound <input checked="" type="checkbox"/> Numerical <input type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.jpg .tiff .png .xls .csv	<input checked="" type="checkbox"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	
Bacterial and phage sequencing data	Raw and processed sequencing data of phages and bacteria	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input type="checkbox"/> Images <input type="checkbox"/> Sound <input checked="" type="checkbox"/> Numerical <input type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.fastq .fast5 .fasta .gb	<input type="checkbox"/> < 1 GB <input checked="" type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	
Data on virulence of phage-resistant bacterial mutants	Virulence assay data	<input checked="" type="checkbox"/> Generate new data	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input checked="" type="checkbox"/> Images <input type="checkbox"/> Sound <input checked="" type="checkbox"/> Numerical <input type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.jpg .tiff .png .xls .csv	<input checked="" type="checkbox"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	
Methods, protocols, lab books	Associated data	<input checked="" type="checkbox"/> Generate new data <input checked="" type="checkbox"/> Reuse existing data	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input type="checkbox"/> Images <input type="checkbox"/> Sound <input type="checkbox"/> Numerical <input checked="" type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.docx .txt .pdf	<input checked="" type="checkbox"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	
Communicative data	Scientific reports, presentations, papers, theses	<input checked="" type="checkbox"/> Generate new data <input type="checkbox"/> Reuse existing data	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input type="checkbox"/> Images <input type="checkbox"/> Sound <input type="checkbox"/> Numerical <input checked="" type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.docx .txt .pdf .pptx	<input checked="" type="checkbox"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	

We will reuse *S. aureus* strains and phages previously isolated and characterized at KU Leuven.

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, refer to specific datasets or data types when appropriate and provide the relevant ethical approval number.

- Yes, human subject data (Provide SMEC or EC approval number below)
- Yes, animal data (Provide ECD reference number below)
- Yes, dual use (Provide approval number below)
- **No**

Will you process personal data? If so, please refer to specific datasets or data types when appropriate and provide the KU Leuven or UZ Leuven privacy register number (G or S number).

- Yes (Provide PRET G-number or EC S-number below)
- **No**

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, ...)? If so, please comment per dataset or data type where appropriate.

- **Yes**
- No

In this project, we will provide a proof-of-concept for phage-coated biomaterials that could be applied in human medicine (medical devices) to avoid bacterial infections with *S. aureus* during/after surgeries.

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material or Data transfer agreements, Research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- Yes
- **No**

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- Yes
- No

DOCUMENTATION AND METADATA

Clearly describe what approach will be followed to capture the accompanying information necessary to keep **data understandable and usable**, for yourself and others, now and in the future (e.g. in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, codebook.tsv etc. where this information is recorded).

All (meta)data and how it was generated and processed is tracked using a combination of digital lab books, which are kept on university-secured network drives and cloud-based systems (such as Google Drive). Both lab books and data are time-stamped, allowing to easily trace back (experimental) details of the corresponding data. Files will follow a standard naming format (e.g. yyyyymmdd_researcherinitials_experimentdescriptor) to improve traceability of data and make them easily findable.

Nearly all digital data formats are commonly used in the field of research and can be visualised/analysed with common software suites or online tools, making them interoperable.

Will a metadata standard be used to make it easier to **find and reuse the data**?

If so, please specify which metadata standard will be used.

If not, please specify which metadata will be created to make the data easier to find and reuse.

- Yes
- No

Where possible, we will strive to include how data was processed into the file or folder of the respective processed data (as .txt file). Data published in or as supplement of open-access peer-reviewed publications will be conform to the standards of the publisher.

DATA STORAGE & BACK-UP DURING THE RESEARCH PROJECT

Where will the data be stored?

- ManGO
- **Shared network drive (J-drive)**
- Personal network drive (I-drive)

- **OneDrive (KU Leuven)**
- Sharepoint online
- Sharepoint on-premis
- **Large Volume Storage**
- Digital Vault
- Other (specify below)

How will the data be backed up?

- **Standard back-up provided by KU Leuven ICTS for my storage solution**
- Personal back-ups I make (specify below)
- Other (specify below)

Is there currently sufficient storage & backup capacity during the project?

If no or insufficient storage or backup capacities are available, explain how this will be taken care of.

- **Yes**
- No (explain solution below)

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

Data (both raw and processed) will be stored on the storage facilities of the respective university from each partner and a secure cloud service (only for processed data), to ensure accessibility by the different partners.

In case data is linked to publications, it will be also made available on public databases which have their own storage facilities (e.g. Sequence Read Archive, Genbank of NCBI).

The university facilities have rigorous data back-up plans in place to avoid data loss as much as possible. These include frequent back-ups, redundancy in storage and spatial separation of data storage sites.

Biological data will be stored at 4°C fridges and -80°C freezers with limited access. A copy of the bacterial and phage database will be kept at each consortium partner. Freezers with biological data are located in the labs which have restricted access for unauthorized personnel (e.g. by means of a badge-system).

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

We will stay within the limits of what is currently provided by our university for digital data storage. For physical data storage, we have the required materials and space available (fridge, freezers).

DATA PRESERVATION AFTER THE END OF THE RESEARCH PROJECT

Which data will be retained for 10 years (or longer, in agreement with other retention policies that are applicable) after the end of the project?

In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

- **All data will be preserved for 10 years according to KU Leuven RDM policy**
- All data will be preserved for 25 years according to CTC recommendations for clinical trials with medicinal products for human use and for clinical experiments on humans
- Certain data cannot be kept for 10 years (explain below)

Where will these data be archived (stored and curated for the long-term)?

- **Large Volume Storage (longterm for large volumes)**
- **Shared network drive (J-drive)**
- **KU Leuven RDR**
- Other (specify below)

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

We will stay within the limits of what is currently provided by our university for digital data storage. For physical data storage, we have the required materials and space available (fridge, freezers).

DATA SHARING AND REUSE

Will the data (or part of the data) be made available for reuse after/during the project?

Please explain per dataset or data type which data will be made available.

- **Yes, as open data**
- Yes, as embargoed data (temporary restriction)
- Yes, as restricted data (upon approval, or institutional access only)
- No (closed access)
- Other (specify below)

All relevant data of the project and associated data such as lab books will be archived for a minimum of 10 years. After this time, irrelevant versions of digital DNA sequences, digital lab notebooks and experimental datasets will be scrutinized for prolonged storage or disposal. All relevant data, however, will be preserved to keep them reusable.

After the IP strategy has been sorted out, relevant data will be published in peer-reviewed journals, making them easily discoverable and identifiable through DOI codes. Specifically, the FAIR policy will be also implemented through Open Access publications.

If access is restricted, please specify who will be able to access the data and under what conditions. **NA**

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

Please explain per dataset or data type where appropriate.

- Yes, privacy aspects
- **Yes, intellectual property rights**
- Yes, ethical aspects
- Yes, aspects of dual-use
- Yes, other
- No

Since some of the data can lead to new IP, the data will be kept confidential within the consortium until the valorisation of the data is clear for everyone. The CELSA charter describes how protection and valorisation of project results will be achieved. IP and copyrights will be handled according to this agreement.

Where will the data be made available?

If already known, please provide a repository per dataset or data type.

- KU Leuven RDR (Research Data Repository)
- **Other data repository (specify below)**
- Other (specify below)

Guidance:

For your initial DMP you can list candidate repositories and explain how you will decide when your data is ready.

Disciplinary repositories are usually the most suitable place to make your data easily findable and reusable within your research community, but if there is no disciplinary repository, or when you work with sensitive data you can use [KU Leuven RDR](#).

If you have physical data also consider if and how you can share these.

When will the data be made available?

- **Upon publication of research results**
- Specific date (specify below)
- Other (specify below)

Which data usage licenses are you going to provide?

If none, please explain why.

- **CC-BY 4.0 (data)**
- Data Transfer Agreement (restricted data)
- MIT licence (code)
- GNU GPL-3.0 (code)
- Other (specify below)

Do you intend to add a persistent identifier (PID) to your dataset(s), e.g. a DOI or accession number? If already available, please provide it here.

- **Yes, a PID will be added upon deposit in a data repository**
- Yes, my dataset already has a PID
- No

What are the expected costs for data sharing? How will these costs be covered?

Open access publication costs are foreseen within the project budget.

RESPONSIBILITIES

Who will manage data documentation and metadata during the research project?
Jeroen Wagemans, Merve Kübra Aktan

Who will manage data storage and backup during the research project?
Jeroen Wagemans, Merve Kübra Aktan

Who will manage data preservation and sharing?
Rob Lavigne, Annabel Braem, Jeroen Wagemans

Who will update and implement this DMP?
Jeroen Wagemans