

–FWO DMP Template

Project supervisors (from application round 2018 onwards) and fellows (from application round 2020 onwards) will, upon being awarded their project or fellowship, be invited to develop their answers to the data management related questions into a DMP. The FWO expects a **completed DMP no later than 6 months after the official start date** of the project or fellowship. The DMP should not be submitted to FWO but to the research co-ordination office of the host institute; FWO may request the DMP in a random check.

At the end of the project, the **final version of the DMP** has to be added to the final report of the project; this should be submitted to FWO by the supervisor-spokesperson through FWO's e-portal. This DMP may of course have been updated since its first version. The DMP is an element in the final evaluation of the project by the relevant expert panel. Both the DMP submitted within the first 6 months after the start date and the final DMP may use this template.

1. General Information	
Name applicant	Ines Thiers
FWO Project Number & Title	1S45922N Importance of Salmonella biofilm exopolymeric substances (EPS) during gut colonization and invasion — potential of EPS inhibition as an evolutionary robust antimicrobial strategy
Affiliation	<input checked="" type="checkbox"/> KU Leuven <input type="checkbox"/> Universiteit Antwerpen <input type="checkbox"/> Universiteit Gent <input type="checkbox"/> Universiteit Hasselt <input type="checkbox"/> Vrije Universiteit Brussel <input type="checkbox"/> Other:
2. Data description	
Will you generate/collect new data and/or make use of existing data?	<input checked="" type="checkbox"/> Generate new data <input checked="" type="checkbox"/> Reuse existing data

<p>Describe the origin, type and format of the data (per dataset) and its (estimated) volume</p> <p><i>If you reuse existing data, specify the source of these data.</i></p> <p><i>Distinguish data types (the kind of content) from data formats (the technical format).</i></p>	<p>NEW DATA</p> <p>Biological material</p> <p>Source WP1-4: <i>S. Typhimurium</i> 14028 wild type strains are available in the Steenackers lab. Starting from this strain, <i>csgBAC</i> and <i>bcsABZC</i> mutants will be constructed in WP1 and saved in the Steenackers bacterial collection.</p> <p>WP4: Experimental evolution: evolved clones after submitting wild type <i>S. Typhimurium</i> 14028 strains to experimental evolution. These will also be saved in the Steenackers bacterial collection.</p> <p>Type /</p> <p>Format Glycerol stocks frozen at -80°C.</p> <p>Volume 2 mL cryotubes and 96-well plates.</p> <p>Experimental results</p> <p>Source WP1 will generate insight in the colonization and invasion capacities of <i>S. Typhimurium</i> wild type and mutants. The degree of colonization and invasion will be assessed using both CFU counts and microscopic pictures.</p> <p>WP2 will generate insight in the interaction between <i>S. Typhimurium</i> EPS-components with the immune system, antibiotics, and the microbiome. Again, both CFU counts and microscopic pictures will be employed to fill this purpose. The immune response will be monitored by measuring cytokine concentrations.</p> <p>WP3 aims to identify potent EPS-inhibitors. Hereto, the cytotoxicity and genotoxicity of the compounds will be validated. Thereafter, the most potent inhibitor will be validated in different models by measuring the immune response and the degree of colonization and invasion.</p> <p>WP4 Resistance development against the EPS-inhibitor will be evaluated by performing competition and evolution experiments. Resistant clones will be whole genome sequenced .</p> <p>Type WP1: Sanger sequencing files, microscopic images, histograms, numeric data WP2-4: Microscopic images, histograms, numeric data, whole genome sequencing</p>
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	Format	WP1-4: .xlsx, .pzfx, .xit, .jpg, .czi, .fastq
	Volume	~ 3 terabyte (mainly high resolution microscopic images and whole genome sequencing)
	EXISTING DATA	
	Source	I will build further on the work of a former PhD student. Consequently, it is possible that I will incorporate previously acquired preliminary data in my analysis. This data includes the results of <i>in vitro</i> and <i>in vivo</i> experiments with <i>S. Typhimurium</i> .
	Type	Microscopic images, histograms, numeric data
	Format	.xlsx, .pzfx, .xit, .jpg, .czi
	Volume	~ 500 gigabyte (mainly high resolution microscopic images)

3. Ethical and legal issues

<p>Will you use personal data? If so, shortly describe the kind of personal data you will use AND add the reference to your file in your host institution's privacy register.</p> <p><i>In case your host institution does not (yet) have a privacy register, a reference is not yet required of course; please add the reference once the privacy register is in place in your host institution.</i></p>	<p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> No</p> <p>If yes:</p> <ul style="list-style-type: none"> - Privacy Registry Reference: - Short description of the kind of personal data that will be used:
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<p>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, add the reference to the formal approval by the relevant ethical review committee(s).</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes:</p> <ul style="list-style-type: none"> - We are currently submitting the ECD application. There has been some delay because I still had to obtain the felasa b certificate. I now have the certificate, so now we can finish the application. Evidently, the mice experiments will not start until we have the ECD approval.
<p>Does your work possibly result in research data with potential for tech transfer and valorisation? Will IP restrictions be claimed for the data you created? If so, for what data and which restrictions will be asserted?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please comment: Our lab already has two patents regarding the 2-amino imidazoles (= our in house developed EPS-inhibitors). Additional patents for the imidazoles are being applied for. The goal is to use these EPS-inhibitors in a wide array of applications, amongst which slow release coating and pacemakers. If the results of my project are promising, they can also be used to combat intestinal infections. Therefore, opportunities to protect intellectual property will be regularly discussed with Leuven Research and Development (LRD), and at least prior to publicly releasing any information.</p>
<p>Do existing 3rd party agreements restrict dissemination or exploitation of the data you (re)use? If so, to what data do they relate and what restrictions are in place?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please comment:</p>

4. Documentation and metadata

<p>What documentation will be provided to enable understanding and reuse of the data collected/generated in this project?</p>	<p>In the Steenackers lab, we work with an electronic lab notebook (from KU Leuven). This notebook organises all data acquired within a project in a standardized manner and attaches a fixed set of metadata (see below). In addition, separate folders are created for the raw data, processed, and final data. The raw data file are read-only and the user is not able to alter this data once submitted</p>
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Will a metadata standard be used? If so, describe in detail which standard will be used. If not, state in detail which metadata will be created to make the data easy/easier to find and reuse.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please specify: The ELN incorporates a fixed set of metadata, including the user coordinating the experiment, the user performing the experiment, the date, and the experimental protocol used.
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5. Data storage & backup during the FWO project

Where will the data be stored?	The data will be stored on the hard drive of my laptop, as well as on the electronic lab notebook (ELN). The ELN is an application hosted on-site within KU Leuven (meaning it is not a cloud storage). Large data files such as microscopy images and whole genome sequencing files will be stored on the internal server of KU Leuven and linked to the ELN.
How will the data be backed up?	The ELN and the internal KU Leuven server contain an automatic back-up for the drive capacity that is in use: <ul style="list-style-type: none"> - A back-up every few hours (at 9h, 12h30, and 17h), of which the latest 7 versions are saved - A daily back-up (at 21h), of which the latest 10 version are saved - A weekly back-up (Sunday at 11h), of which the latest 6 version are saved
Is there currently sufficient storage & backup capacity during the project? If yes, specify concisely. If no or insufficient storage or backup capacities are available, then explain how this will be taken care of.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, please specify: KU Leuven provides easily expandable storage space based on their internal server maintained by the IT service of KU Leuven. Our lab uses two drives on the KU Leuven internal server: the J-drive, and the K-drive. The J-driver is intended for daily use, while the K-drive mainly serves as a long-term storage space.

<p>What are the expected costs for data storage and backup during the project? How will these costs be covered?</p> <p><i>Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of the allocated project budget to be used to cover the cost incurred.</i></p>	<p>As the use of ELN is relatively new at KU Leuven, no costs are accounted yet. If costs were to be accounted, they will likely resemble these of other SharePoint sites with similar storage capacity, which is</p> <ul style="list-style-type: none"> - €344.80 for the first year - €274.80 for the next years <p>Additional storage space on the KU Leuven internal server can be acquired. Our lab uses two drives on the KU Leuven internal server: the J-drive, and the K-drive:</p> <ul style="list-style-type: none"> - The costs for the J-drive are €519/TB per year - The costs for the K-drive are €100/TB/year <p>The costs will be covered by the project.</p>
<p>Data security: how will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?</p>	<ul style="list-style-type: none"> - Access to the ELN only works via KU Leuven Single Sign On - Each user should have a valid KU Leuven intranet user ID and password - Permission for access can be defined in detail by the local admin of the SharePoint site. - Biological samples will be stored in a secured -80°C freezer at the facility.

6. Data preservation after the end of the FWO project

FWO expects that data generated during the project are retained for a period of minimally 5 years after the end of the project, in as far as legal and contractual agreements allow.

<p>Which data will be retained for the expected 5 year period after the end of the project? In case only a selection of the data can/will be preserved, clearly state the reasons for this (legal or contractual restrictions, physical preservation issues, ...).</p>	<p>All data.</p>
<p>Where will these data be archived (= stored for the long term)?</p>	<p>Using the ELN which is connected to the KU Leuven internal server.</p>

<p>What are the expected costs for data preservation during these 5 years? How will the costs be covered?</p> <p><i>Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of the allocated project budget to be used to cover the cost incurred.</i></p>	<p>As the use of ELN is relatively new at KU Leuven, no costs are accounted yet. If costs were to be accounted, they will likely resemble these of other SharePoint sited with similar storage capacity, which is</p> <ul style="list-style-type: none"> - €344.80 for the first year - €274.80 for the next years <p>Additional storage space on the KU Leuven internal server can be acquired. Our lab uses two drives on the KU Leuven internal server: the J-drive, and the K-drive:</p> <ul style="list-style-type: none"> - The costs for the J-drive are €519/TB per year - The costs for the K-drive are €100/TB/year <p>The costs will be covered by the project.</p>
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7. Data sharing and reuse

<p>Are there any factors restricting or preventing the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?</p> <p>Which data will be made available after the end of the project?</p>	<p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> No</p> <p>If yes, please specify:</p>
<p>Where/how will the data be made available for reuse?</p>	<p><input checked="" type="checkbox"/> In an Open Access repository</p> <p><input type="checkbox"/> In a restricted access repository</p> <p><input type="checkbox"/> Upon request by mail</p> <p><input type="checkbox"/> Other (specify):</p>
<p>When will the data be made available?</p>	<p>After publication (together with the paper).</p> <p>Proper links to the datasets will be provided in the corresponding publications.</p>
<p>Who will be able to access the data and under what conditions?</p>	<p>Most journals request to make it publicly available for everyone, so we will follow that.</p>

<p>What are the expected costs for data sharing? How will these costs be covered?</p> <p><i>Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of the allocated project budget to be used to cover the cost incurred.</i></p>	<p>The costs will depend on the repositories in which the data is shared. Costs will be covered by the project.</p>
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8. Responsibilities

Who will be responsible for the data documentation & metadata?	Ines Thiers
Who will be responsible for data storage & back up during the project?	Ines Thiers ELN IT technicians
Who will be responsible for ensuring data preservation and sharing?	Ines Thiers Hans Steenackers ELN technicians
<p>Who bears the end responsibility for updating & implementing this DMP?</p> <p><i>Default response: The PI bears the overall responsibility for updating & implementing this DMP</i></p>	Ines Thiers