DMP title

Project Name EXACT - DMP title
Project Identifier G0G2422N
Grant Title G0G2422N
Principal Investigator / Researcher Lise Appels
Institution KU Leuven

1. General Information
Name applicant

Prof. Lise Appels

FWO Project Number & Title
G0G2422N - Cascaded EXtraction of Antibacterial ComponenTs from brown seaweeds (EXACT)

Affiliation

- KU Leuven
- Other

KULeuven
Hogere Zeevaartschool / Antwerp Maritime Academy
Flamac

2. Data description
Will you generate/collect new data and/or make use of existing data?

- Generate new data

Describe in detail the origin, type and format of the data (per dataset) and its (estimated) volume. This may be easiest in a table (see example) or as a data flow and per WP or objective of the project. If you reuse existing data, specify the source of these data. Distinguish data types (the kind of content) from data formats (the technical format).

type of data	source (experiment definition)	format of data	Volume	Where created
numerical	extraction data, chemical or biological composition of extracts, minimum inhibitory concentrations and gene expression data, physical aspects of paint surfaces, compositions of coating, formulations, analytical equipment data, ...	spreadsheets (.xlsx, .csv, .xlm)	MB	WP 1, 2, 3, 4
images	microscopy images of biofilm development, PSD measurements	photos (.tif, .jpg)	>10 GB	WP 1,,3, 4
procedures	description of methodologies for seaweed extraction, paint preparation, MTP preparation, microbiological tests, hydrodynamic resistance tests, ...	text files (.docx / .txt / ...)	MB	WP 1, 2, 3, 4
Analysis scripts	R scripts with details of data analysis of all numerical results	Markdown files	MB	WP 1, 2, 3, 4

3. Legal and ethical issues

Will you use personal data? If so, shortly describe the kind of personal data you will use. Add the reference to your file in KU Leuven's Register of Data Processing for Research and Public Service Purposes (PRET application). Be aware that registering the fact that you process personal data is a legal obligation.

- No

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)

- No

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?

- Yes

The project outcome is expected to attract attention from the industrial groups and potentially external audience. In case of IP being filed, general patent data sharing restrictions will be asserted prior to patent publication (and discussed with the legal departments of the partners).

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?

- No

Overall, there are currently no 3rd party agreements that restrict the dissemination or exploitation of data produced by the partners.

4. Documentation and metadata

What documentation will be provided to enable reuse of the data collected/generated in this project?

1. Numerical data, obtained from (i) extraction tests (TOC/TN, ICP, FatExtractor, ...) (ii) gene expression data and (iii) physical paint aspects are transferred to .xlsx and will be collected per respective test. These .xlsx files will be stored and ordered per seaweed species and per component/sample in separate folders. The breakdown of folders will look like this: seaweed species > component > .xlsx_DATE , Within the .xlsx file, each tab corresponds to a optimized/investigated parameter.

2. Images of the biofilm development and particle size distribution will be stored in separate folders per assay/seaweed species. These files (.jpg, .tiff,) will be stored and ordered per assay and per extraction technology (US/MW) in separate folders. The breakdown of folders will look like this: assay/extraction technology > seaweed species > .jpeg/tiff_DATE. The following information will be stored (as a ReadMe/doc file) together with the image (microscopy) file: dimensions, image type, bit-depth, pixel sizes and microscope settings (methodology/protocol).

3. Procedures, description of methodologies for seaweed extraction, paint preparation, microbiological tests,... will be stored via a .txt/.doc file per seaweed species, extracted component in separate folders.

4. For samples that are exchanged between the reseachers involved, a google spreadsheet is available that contains following information: sample handling, data sample generation, sample conditions (fridge, freezer, thawing), date of sample shipment, date sample received and rough estimation of the sample contents. Each month a printscreen is made of this google spreadsheet and stored on the Teams page/onedrive.

5. For the Matlab and R (statistical and modeling) scripts a ReadMe file is foreseen that describes the applied methodology. It is stored in the same folder as the corresponding numerical data (see 1). Where appropriate and benefical for frequent repititive tasks, reproducible R Markdown documents weaving together narrative text and code to produce formatted document output will be used.

Will a metadata standard be used? If so, describe in detail which standard will be used. If no, state in detail which metadata will be created to make the data easy/easier to find and reuse.

- Yes

DOSP will follow the metadata standard of DataCite. (https://rd-alliance.github.io/metadata-directory/standards/datacite-metadata-schema.html)

5. Data storage and backup during the FWO project

Where will the data be stored?

The time-stamped master copy of the data will be kept on our research unit central storage facility (KU Leuven server) and onedrive. Data obtained by Antwerp Maritime Academy will also be kept on their Digital Open Science Platform (DOSP), on which the other teams will be given access. Primary data generated or obtained by Flamac will be kept on their dedicated project server. Data shared with project partners will be stored in a dediacted Teams environment.

How is backup of the data provided?

The data will be stored on the university's central servers with automatic daily back-up procedures, on the DOSP platform of Antwerp Maritime Academy (with cloud backup). For Flamac's local project data in Sharepoint back-up procedures are in place.

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.

- Yes

KULeuven: Currently there is sufficient storage & backup capacity. All reports are stored at Teams. Unpublished data of the researchers is stored on the servers and cloud services provided by the respective host institution.

Antwerp Maritime Academy: DOSP offers >100 GB storage per project, which is sufficient for the whole project.

Flamac: Primary data and locally stored data are stored on the servers and cloud services with TB capacity.

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

The cost for data preservation of 5 years is estimated to be 500 EUR. These costs are covered by the coordination budget.

At Antwerp Maritime Academy and Flamac, data storage costs are paid from the central budget (fueled by project overhead).

Data security: how will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

The data at each partner institute are kept in a secure environment to which only designated personnel (also from the other partners) will be given personal access.

6. Data preservation after the FWO project

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, ...).

All data will be retained for this period.

Where will the data be archived (= stored for the longer term)?

As confirmed by the KU Leuven RDM policy, the data will be stored on the university's central servers (with automatic back-up procedures) for at least 10 years. This is equally the case for the data stored at the DOSP servers of Antwerp Maritime Academy and the project server at Flamac.

What are the expected costs for data preservation during the retention period of 5 years? How will the costs be covered?

The cost for data preservation of 5 years is estimated to be 500 EUR for KULeuven. For DOSP at Antwerp Maritime Academy, a general subscription fee has been set of 750 EUR/year for the use of the DOSP for the whole institute (all projects). The data preservation cost for Flamac is

estimated to be AAA EUR/year (operation and maintenance of project servers and cloud services) (all projects)
These costs are covered by the coordination budget (at KULeuven) and the overhead (at Antwerp Maritime Academy) and the overhead or direct project contributions. where eligible (at Flamac).

7. Data sharing and reuse

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)?

- No

Which data will be made available after the end of the project?

All data supportive of the published research findings, unless licensable/patentable (in which case they will be under embargo for as long as needed to finalise the valorisation procedures).

Where/how will the data be made available for reuse?

- In an Open Access repository
- In a restricted access repository

When will the data be made available?

- After an embargo period. Specify the length of the embargo and why this is necessary
- Upon publication of the research results

Embargo will be established for all data which may lead to valorisable output. The data will be kept under embargo for as long as it takes to finalise this output.

Who will be able to access the data and under what conditions?

The links to the full datasets (with doi number) will be provided as supplement to the publication which is supported by these data, as an open access dataset under a CC-BY license. Therefore, it will be available to anyone for any purpose, provided that they give appropriate credit to the creators.

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

The cost for data preservation of 5 years is estimated to be 500 EUR for KULeuven. For DOSP at Antwerp Maritime Aademy, a general subscription fee has been set of 750 EUR/year for the use of the DOSP for the whole institute (all projects) These costs are covered by the coordination budget (at KULeuven) and the overhead (at Antwerp Maritime Academy).

8. Responsibilities

Who will be responsible for data documentation & metadata?

All scientific partners.

Who will be responsible for data storage & back up during the project?

All scientific partners.

Who will be responsible for ensuring data preservation and reuse ?

All scientific partners.

Who bears the end responsibility for updating & implementing this DMP?
The PI bears the end responsibility of updating & implementing this DMP.