Plan Overview

A Data Management Plan created using DMPonline.be

Title: Manufacturing of cytokine-producing artificial dendritic cells for cancer therapy

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Affiliation: KU Leuven (KUL)

Funder: Fonds voor Wetenschappelijk Onderzoek - Research Foundation Flanders (FWO)

Template: FWO DMP (Flemish Standard DMP)

Project abstract:

Dendritic cells (DCs), also known as the immune system's professional antigen-presenting cells (APCs) are paramount for initiating anti-tumor T-cell immunity. Significant efforts have been made to develop DC-based therapies using donor-derived DCs. The use of autologous or allogenic DCs pulsed
with tumor lysates or tumor antigens represents a promising medical strategy for cancer treatment by boosting the priming of autologous tumor-specific T cells. However, several major drawbacks, including the high costs related to the time-consuming and labor-intensive manufacturing, the difficulty to use allogenic DCs and the sensitivity of DCs to tumor-derived immunosuppression are still hindering the potential of DCs-based therapies. To address these issues, I aim to generate a
novel artificial DC(aDC) that will mimic the T-cell priming of natural DCs but will be controllable, more efficient, and less expensive to produce and handle. aDCs will incorporate a peptide:MHC I complex, costimulatory molecules, and a lipid-based vesicles "cytokine-releasing" system. aDCs will be characterized via cryogenic electron-, scanning electron- and confocal microscopy. Their ability
to activate T cells for tumor inhibition will be evaluated in vitro by a combination of functional assays and in vivo with mouse tumor models. Overall, these aDCs could allow to circumvent many limitations that hinder the potential of DC-based therapies and therefore represent a novel treatment strategy for cancer.

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Start date: 01-11-2024

End date: 31-10-2028

Last modified: 09-01-2025

Manufacturing of cytokine-producing artificial dendritic cells for cancer therapy
DPIA

DPIA

Have you performed a DPIA for the personal data processing activities for this project?

- No

Manufacturing of cytokine-producing artificial dendritic cells for cancer therapy
Application DMP

Questionnaire

Describe the datatypes (surveys, sequences, manuscripts, objects …) the research will collect and/or generate and /or (re)use. (use up to 700 characters)

Digital data
- experimental data (flow data, microscopy data, ELISA data, WB data, DLS data, BCA data, pictures). Data will be stored on personal PC or OneDrive with a daily sync to the J-drive. (.xlsx, .doc, .ppt, .pdf, .txt, .jpeg, .png, .csv, .tif, .lif...)
- lab notebooks. Logging will be done in OneNote. Pictures will be taken with experimental procedures and stored on the J-drive.

- Analysis scripts will be written in R or python. Stored on J-drive.

Specify in which way the following provisions are in place in order to preserve the data during and at least 5 years after the end of the research? Motivate your answer. (use up to 700 characters)

1. Designation of responsible person (If already designated, please fill in his/her name.)

   During the project: Jiangyu GanXavier Casadevall i Solvas, Hojjat Alizadeh Zeinabad, Damya Laoui
   After the project: Xavier Casadevall i Solvas, Damya Laoui
2. Storage capacity/repository.

   During the research, data will be stored on the KU Leuven server (J-drive, L-drive). Capacity can be increased upon request. Upon publishing, data will be uploaded to domain-specific repositories and on the KU Leuven RDR with a persistent identifier. After the end of the project, non-published data will be archived on the KU Leuven K-drive.

What's the reason why you wish to deviate from the principle of preservation of data and of the minimum preservation term of 5 years? (max. 700 characters)

No deviation expected.

Are there issues concerning research data indicated in the ethics questionnaire of this application form? Which specific security measures do those data require? (use up to 700 characters)

No issues expected.

Which other issues related to the data management are relevant to mention? (use up to 700 characters)

No issues expected.

Manufacturing of cytokine-producing artificial dendritic cells for cancer therapy
GDPR

GDPR

Have you registered personal data processing activities for this project?

- No

Manufacturing of cytokine-producing artificial dendritic cells for cancer therapy
FWO DMP (Flemish Standard DMP)

1. Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

				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
		Please choose from the following options: • Generate new data • Reuse existing data	*Please choose from the following options:* • Digital • Physical	*Please choose from the following options:* • Observational • Experimental • Compiled/aggregated data • Simulation data • Software • Other • NA	*Please choose from the following options:* • .por, .xml, .tab, .csv,.pdf, .txt, .rtf, .dwg, .gml, … • NA	*Please choose from the following options:* • <100MB • <1GB • <100GB • <1TB • <5TB • <10TB • <50TB • >50TB • NA	
DLS data	raw data from DLS	New	Digital	Experimental	.dts	<100 MB	
BCA data	raw data from Multiskan FC	New	Digital	Experimental	.txt, .tif	<100 MB	
WB data	western blot	New	Digital	Experimental	.csv, .tif	<1 GB	
Microscopy data	Confocal microscopy	New	Digital	Experimental	.nd2, .tif	<100 GB	
FACS data	Flow cytometry	New	Digital	Experimental	.fcs, .tif	<100 GB	
ELISA data	raw data from Multiskan FC	New	Digital	Experimental	.txt, .tif	<100 MB	
Processed data	Analysis of generated data	New	Digital	Software	.xls, .ppt,	<100 GB	
Figures and graphs	Figures and graphs of processed data	New	Digital	Software	.xls, .jpeg, .pfzx, .png	<100 GB	
Protocols	Methods and SOPs of used protocols for experiments	New	Digital	Software	.doc(x), .xls	<1 GB	

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

N/A

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? Describe these issues in the comment section. Please refer to specific datasets or data types when appropriate.

- Yes, dual use

Will you process personal data? If so, briefly describe the kind of personal data you will use in the comment section. Please refer to specific datasets or data types when appropriate.

- 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

we will contact the TTO (Tech Transfer Office) and LRD (KU Leuven Research & Development) for patent and tech transfer.

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material/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.

- 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.

- No

2. 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).

The KU Leuven (KUL) ICT service is responsible for the long-term storage server (K:Drive). The data is transferred to this drive after publication. All obtained data are saved on the KUL drive (J:Drive) and are accessible for the promotor of this project (Prof. Xavier Casadevall i Solvas) at all times. The MeBioS has implemented a data research management plan based on the general guidelines of the KUL, in accordance with FWO requirements, and has hired a dedicated data manager to take care of these actions. Also, remote access to J:Drive is possible through the KUL Box cloud and One Drive. We use SyncbackFree for backups in between One Drive and J:Drive folders.

Will a metadata standard be used to make it easier to find and reuse the data? If so, please specify (where appropriate per dataset or data type) which metadata standard will be used. If not, please specify (where appropriate per dataset or data type) which metadata will be created to make the data easier to find and reuse.

- No

3. Data storage & back-up during the research project

Where will the data be stored?

Data will be stored on personal PC, OneDrive, with daily backups to the KU Leuven J-drive.

How will the data be backed up?

Back-ups will be managed by the ICTS department of KU Leuven.

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

The storage capacity of the server of ICTS provides sufficient storage volume for our generated data.

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

Access is managed by KU Leuven.

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

Yearly costs are ~500EU. Costs will be covered by project funding.

4. Data preservation after the end of the research project

Which data will be retained for at least five 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 project data will be stored at least five years.

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

Published data will be stored in domain-specific databases and RDR. Unpublished data will be stored on the KU Leuven K-drive upon completion of the project.

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

N/A

5. Data sharing and reuse

Will the data (or part of the data) be made available for reuse after/during the project? In the comment section please explain per dataset or data type which data will be made available.

- Yes, in an Open Access repository

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

N/A

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 in the comment section per dataset or data type where appropriate.

- No

Where will the data be made available? If already known, please provide a repository per dataset or data type.

N/A

When will the data be made available?

N/A

Which data usage licenses are you going to provide? If none, please explain why.

N/A

Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, you have the option to provide it in the comment section.

- Yes

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

N/A

6. Responsibilities

Who will manage data documentation and metadata during the research project?

Jiangyu Gan(daily), Hojjat Alizadeh Zeinabad(weekly), Xavier Casadevall i Solvas(final), Damya Laoui(final)

Who will manage data storage and backup during the research project?

Jiangyu Gan(daily)

Who will manage data preservation and sharing?

Jiangyu Gan(daily), Hojjat Alizadeh Zeinabad(weekly), Xavier Casadevall i Solvas(final), Damya Laoui(final)

Who will update and implement this DMP?

Jiangyu Gan