1. General Project Information

Name Grant Holder & ORCID	**Carla Cadena del Castillo, ORCID: 0000-0001-5480-589X**
Contributor name(s) (+ ORCID) & roles	
Project number [1] & title	1297724N - An evolutionarily conserved negative feedback loop regulating de novo lipogenesis
Funder(s) GrantID [2]	D-2024-2567
Affiliation(s)	KU Leuven ROR identifier KU Leuven: 3M230267
Please provide a short project description	Animals sense fluctuating nutrient supplies and adapt their metabolism to maintain energy homeostasis. In a fed condition, organisms activate the signaling pathways and transcriptional programs to promote the storage of the excess energy as lipids, which are leveraged to sustain basal activities in a starved condition. In vertebrates, the liver and adipose tissue serves as the primary organs which synthesize lipids from carbohydrates, a process defined as de novo lipogenesis. However, our understanding of the molecular mechanism underlying de novo lipogenesis in the liver and adipose tissue is far from complete. In this research project, I will elucidate a novel signaling pathway controlling the transcriptional program of de novo lipogenesis in the liver and adipose tissue. My findings will contribute to our understanding of nutrient sensing, metabolic adaptation, and thereby animal physiology.

2. Research Data Summary

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[1] "Project number" refers to the institutional project number. This question is optional. Applicants can only provide one project number.

[2] Funder(s) GrantID refers to the number of the DMP at the funder(s), here one can specify multiple GrantIDs if multiple funding sources were used.

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 [3].

				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
Transgenic cell lines	Transgenic cell lines generated by protein overexpression or gene deletion	New	Physical	N/A	N/A	N/A	screwcap tubes (2 ml) stored in the -150 C freezer
Vectors	Plasmid vectors (DNA)	New	Physical	N/A	N/A	N/A	1.5 ml tubes stored at -20 C.
Proteins	Purified proteins	New	Physical	N/A	N/A	N/A	1.5 ml tubes stored in the -80 C freezer.
TEXT	Protocols and description of results	New	Digital	Textual	.txt or .docx	> 1GB	N/A
Microscopy Images	Fluorescent and Confocal microscopy of cells	New	Digital	Images	.tiff or .czi	< 1 GB	N/A
Experimental images	Gels and blot images	New	Digital	Images	.tiff .zip	< 1 GB	N/A
Statistical analyses	files from statistical analyses	New	Digital	Numerical	.prsm and xls	< 1 GB	N/A

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[3] Add rows for each dataset you want to describe.

Mass spectrometry	Raw and processed files	New	Digital	Numerical	.mzML and .R and .TXT	10-50 GB	N/A

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)? If so, refer to specific datasets or data types when appropriate and provide the relevant ethical approval number.	Human biopsies: EKNZ BASEC 2016-01040 Mouse experiment PPL: 133/2023
Will you process personal data[4]? 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).	☒ 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.	☒ No

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[4] See Glossary Flemish Standard Data Management Plan

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 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 to what data they relate and which restrictions will be asserted.	☒ No

3. 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). *RDM guidance on documentation and metadata.*	1) Protocols and descriptions containing info about both materials (product names, vendors, chemical ID's, instrument ID's….) and methods (experimental setting, parameters, set-up's, …) will be collected in an electronic lab book that remain property of the lab. 2) Data (images, excel, word, statistical output, sequencing data, mass spec data…) will be stored on the lab's drive, mass-spectrometry data will be kept by the KU Leuven-mass spec facility (Sybioma), all daya is centrally back-upped by the KU Leuven SET-IT service. Data is automatically cloud-based (one-drive). 3) Physical samples (vectors, proteins, plasmids, strains, seeds) will be stored for long term in the laboratory: - Cell lines: in screwcaps in the -150C freezer equipped with a temperature alarm centrally controlled by the KU Leuven dispatch. - Vectors and plasmids: in screwcaps in the -20C freezer, equipped with a temperature alarm. - Protein samples: in screwcaps in the -80C freezer, equipped with a temperature alarm centrally controlled by the KU Leuven dispatch. These physical samples will be inventoried digitally (in Excel) and will be updated with new data.
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. *REPOSITORIES COULD ASK TO DELIVER METADATA IN A CERTAIN FORMAT, WITH SPECIFIED ONTOLOGIES AND VOCABULARIES, I.E. STANDARD LISTS WITH UNIQUE IDENTIFIERS.*	☒ Yes Metadata from microscopy and image experiments and from mass spectrometry experiments is collected and stored in software specific files (.czi), .txt, or .csv readable files. The metadata is stored alongside the raw data and the processed/analyzed data. The metadata contains all information on how the data was obtained (machine settings), processed and all the sample identification parameters.

4. Data Storage & Back-up during the Research Project	
Where will the data be stored? *Consult the [interactive KU Leuven storage guide](#) to find the most suitable storage solution for your data.*	☒ Shared network drive (J-drive) ☐ Personal network drive (I-drive) ☒ OneDrive (KU Leuven) The data that will be part of the research papers will be back-up in a project folder on the shared drive (J:) of KU Leuven. The folder will be open for the members participating in this FWO project and is secured and backed-up by the ICTS service of KU Leuven. Copies will be kept on personal devices one-drive.
How will the data be backed up? *WHAT STORAGE AND BACKUP PROCEDURES WILL BE IN PLACE TO PREVENT DATA LOSS?*	☒ Standard back-up provided by KU Leuven ICTS for my storage solution. The digital data will be stored on the university's central servers with automatic daily back-up procedures.
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 KU Leuven provides sufficient storage and back-up capacity during and after the project. A dedicated folder will be made for the project (1 TB) on which the collaborators will work jointly and store data files.
How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons? *CLEARLY DESCRIBE THE MEASURES (IN TERMS OF PHYSICAL SECURITY, NETWORK SECURITY, AND SECURITY OF COMPUTER SYSTEMS AND FILES) THAT WILL BE TAKEN TO ENSURE THAT STORED AND TRANSFERRED DATA ARE SAFE.* [Guidance on security for research data](#)	The network drive for the FWO project folder and the large volume storage folder are secured by the ICTS service of KU Leuven with a mirror copy and a two-factor authentication login. Only other lab members, will have access to the shared folder. Unauthorized persons do not have access to this system.
What are the expected costs for data storage and backup during the research project? How will these costs be covered?	OneDrive for business is free for staff and students of KU Leuven (up to 1 TB per user). If additional storage would be required the data storage costs will be covered by other lab incomes.

5. 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...). _Guidance on data preservation_	☒ All data will be preserved for 10 years according to KU Leuven RDM policy
Where will these data be archived (stored and curated for the long-term)? _Dedicated data repositories are often the best place to preserve your data. Data not suitable for preservation in a repository can be stored using a KU Leuven storage solution, consult the interactive KU Leuven storage guide._	☒ KU Leuven RDR ☐ Large Volume Storage (longterm for large volumes) ☐ Shared network drive (J-drive) ☐ Other (specifiy): 1) The digital data will be stored on the lab's archive drive (K-drive) managed by the university's central servers (with automatic backup procedures) for at least 10 years, conform the KU Leuven RDM policy. 2) The physical data will be stored in freezers and seed cabinets in the host lab for up to 10 years after the project. 3) The accompanying metadata will be stored on the lab's digital drives (with automatic backup procedures).
What are the expected costs for data preservation during the expected retention period? How will these costs be covered?	The archive and large-data storage drive (drive) charges 503.66 euro/TB/year. The data storage costs are covered by other lab incomes. Costs involved with the maintenance of the freezers and seed cabinet will be paid other project incomes, as these facilities will be used by other active users.

6. 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. *Note that 'available' does not necessarily mean that the data set becomes openly available, conditions for access and use may apply. Availability in this question thus entails both open & restricted access. For more information: https://wiki.surfnet.nl/display/standards/info-eu-repo/#infoeurepo-AccessRights*	☐ Yes, as open data ☒ Yes, as embargoed data (temporary restriction) ☐ Yes, as restricted data (upon approval, or institutional access only) ☐ No (closed access) ☐ Other, please specify:
If access is restricted, please specify who will be able to access the data and under what conditions.	The data will be embargoed while the researcher will be working on the project outputs and then opened (open access) once the publications are out.
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.	☒ No If yes, please specify:
Where will the data be made available? If already known, please provide a repository per dataset or data type.	☒ KU Leuven RDR All digital data will be stored and be available for lab members using a shared network drive and large volume storage provided by the KU Leuven. In addition, the relevant data will be made available to external people upon request by mail or published in papers and repository websites.
When will the data be made available?	☒ Upon publication of research results

Which data usage licenses are you going to provide? If none, please explain why. *A DATA USAGE LICENSE INDICATES WHETHER THE DATA CAN BE REUSED OR NOT AND UNDER WHAT CONDITIONS. IF NO LICENCE IS GRANTED, THE DATA ARE IN A GREY ZONE AND CANNOT BE LEGALLY REUSED. DO NOTE THAT YOU MAY ONLY RELEASE DATA UNDER A LICENCE CHOSEN BY YOURSELF IF IT DOES NOT ALREADY FALL UNDER ANOTHER LICENCE THAT MIGHT PROHIBIT THAT.* *Check the <u>RDR guidance on licences</u> for data and software sources code or consult the <u>License selector tool</u> to help you choose.*	☒ CC-BY 4.0 (data) ☐ Data Transfer Agreement (restricted data) ☐ MIT licence (code) ☐ GNU GPL-3.0 (code) ☐ Other (specify)
Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, please provide it here. *INDICATE WHETHER YOU INTEND TO ADD A PERSISTENT AND UNIQUE IDENTIFIER IN ORDER TO IDENTIFY AND RETRIEVE THE DATA.*	☐ Yes, a PID will be added upon deposit in a data repository ☐ My dataset already has a PID ☒ No
What are the expected costs for data sharing? How will these costs be covered?	There are no costs, as we will use free online depositories.

7. Responsibilities	
Who will manage data documentation and metadata during the research project?	Prof. Mitsugu Shimobayashi (PI) is responsible for the lab's data storage policy. He is also in contact with SET-IT to manage and update the storage drives.
Who will manage data storage and backup during the research project?	The ICTS service of KU Leuven is responsible for the back-up of the network drives at KU Leuven.
Who will manage data preservation and sharing?	While the project is ongoing Carla Cadena will take care of the preservation, after the completion of the project Prof. Shimobayashi will follow up. The researcher will manage the sharing of the data.
Who will update and implement this DMP?	Carla Cadena and Prof. Shimobayashi