

## FWO DMP Template - Flemish Standard Data Management Plan

### Version KU Leuven

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.

The DMP template used by the Research Foundation Flanders (FWO) corresponds with the Flemish Standard Data Management Plan. This Flemish Standard DMP was developed by the Flemish Research Data Network (FRDN) Task Force DMP which comprises representatives of all Flemish funders and research institutions. This is a standardized DMP template based on the previous FWO template that contains the core requirements for data management planning. To increase understanding and facilitate completion of the DMP, a standardized **glossary** of definitions and abbreviations is available via the following [link](#).

1. General Project Information	
Name Grant Holder & ORCID	<b>Hannelore Kemps</b> 0000-0001-9248-1697
Contributor name(s) (+ ORCID) & roles	<b>Aernout Lutun</b> (0000-0001-7902-9524), supervisor
Project number <sup>1</sup> & title	3M230218 - Unravelling the role of transcription factor Prdm16 in endothelial cells during the progression of ischaemic stroke.
Funder(s) GrantID <sup>2</sup>	1271824N
Affiliation(s)	<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: ROR identifier KU Leuven: 05f950310

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<sup>1</sup> “Project number” refers to the institutional project number. This question is optional. Applicants can only provide one project number.

<sup>2</sup> 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.

Please provide a short project description	<p>Ischaemic stroke is defined as a focal neurological deficit of vascular origin to the central nervous system. During an ischaemic event, several cerebrovascular adaptations occur, including alterations in blood-brain barrier (BBB) permeability as well as recruitment and remodelling of collateral arteri(ol)es, which are both determinant for stroke outcome. Understanding the molecular mechanisms that govern the maintenance and function of both collateral arteri(ol)es and BBB capillaries upon cerebral ischaemia is crucial to establish new effective therapies. Recently, my host lab has found that transcription factor Prdm16 in arterial endothelial cells supports arterial flow recovery during hind limb ischaemia by preserving their function. In this project, I will determine whether Prdm16 has a similar role during the progression of ischaemic stroke. My preliminary data shows a protective role for endothelial Prdm16 on ischaemic stroke lesion development. I will first elucidate whether Prdm16 limits infarct growth by preserving collateral function and/or BBB integrity upon cerebral ischaemia. Next, I will unravel the downstream targets that mediate the protective impact of endothelial Prdm16 during stroke. Finally, I will investigate the translational relevance of targeting Prdm16 or its mediators upon ageing to improve cerebrovascular function following stroke. Altogether, I expect that this project will lead to the identification of new treatment strategies for stroke patients.</p>
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## 2. 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 <sup>3</sup>.

Dataset Name	Description	New or Reused	Digital or Physical	ONLY FOR DIGITAL DATA	ONLY FOR DIGITAL DATA	ONLY FOR DIGITAL DATA	ONLY FOR PHYSICAL DATA
				Digital Data Type	Digital Data Format	Digital Data Volume (MB, GB, TB)	Physical Volume

<sup>3</sup> Add rows for each dataset you want to describe.

Single-nuclei RNA sequencing raw data sets	Acquired from single-cell core facility	<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:	.fastq files, .gz files, .bam files	<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	
Single-nuclei RNA sequencing processed datasets	Processed data allowing downstream analysis of single-cell results	<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 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:	.xls files, .jpeg files, .pdf files, .txt files, .cvs files	<input type="checkbox"/> < 1 GB <input type="checkbox"/> < 100 GB <input checked="" type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	
Microscopic images of immuno-fluorescence and histochemical stainings	Images from mouse tissues	<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 checked="" 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:	.jpeg files, Zen .zvi files, .czi files, .tiff files	<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	
Macroscopic images of coronal brain sections	Images for ischaemic lesion size assessment	<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 checked="" type="checkbox"/> Images <input type="checkbox"/> Sound <input type="checkbox"/> Numerical <input type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software	.jpeg files, .pdf files	<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	

				<input type="checkbox"/> Other:			
Mouse genotyping gel pictures	Genotyping results from gel electrophoresis	<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 checked="" 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:	.jpeg files	<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	
Electron microscopic images	Images from mouse tissues	<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 checked="" 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:	.jpeg files, .tiff files	<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	
Ultrafast ultrasound images	Images from functional ultrasound imaging and ultrasound localisation microscopy	<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 checked="" 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:	.tiff files	<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	

Laser Speckle Contrast images	Images acquired from Laser Speckle Contrast Imaging	<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 checked="" 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:	.psfx files, .png files	<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	
Fluorimetric analyses	Files generated from fluorimetric measurements (ELISA, BCA protein assay, tracer leakage experiments)	<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 checked="" type="checkbox"/> Numerical <input checked="" type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.xls files	<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	

Morphometric analysis data		<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 checked="" type="checkbox"/> Numerical <input type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.xls files	<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	
Statistical analysis		<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 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:	Prism .pzfx files, R package .r files	<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	
Composition figures, digital images	Figures for abstracts, posters and publications	<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 checked="" 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:	.eps files, Acrobat .pdf files, Adobe Indesign .indd files, Adobe Illustrator .ai files, .tiff files, .jpeg files, .png files	<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	
SOPs	Staining, qPCR, Genotyping,	<input checked="" type="checkbox"/> Generate new data <input checked="" type="checkbox"/> Reuse existing	<input checked="" type="checkbox"/> Digital <input type="checkbox"/> Physical	<input type="checkbox"/> Audiovisual <input type="checkbox"/> Images <input type="checkbox"/> Sound	Word .doc files	<input checked="" type="checkbox"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB	

	nuclei isolation, <i>etc.</i>	data		<input type="checkbox"/> Numerical <input checked="" type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:		<input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input type="checkbox"/> NA	
Sample inventories		<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:	.xlsx files	<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	
quantitative (q)RT-PCR data		<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 checked="" type="checkbox"/> Numerical <input checked="" type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:	.cvs files	<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	
Tissues	Paraffin embedded mouse tissues	<input checked="" type="checkbox"/> Generate new data <input 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"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB	Approximately 300 tissue blocks



				<input type="checkbox"/> Textual <input type="checkbox"/> Model <input type="checkbox"/> Software <input type="checkbox"/> Other:		<input type="checkbox"/> > 5 TB <input checked="" type="checkbox"/> NA	
Paraffin sections	Mouse origin	<input checked="" type="checkbox"/> Generate new data <input 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:		<input 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 checked="" type="checkbox"/> NA	30 drawers of 100 slides
Snap frozen tissues	Mouse origin, stored at -80°C	<input checked="" type="checkbox"/> Generate new data <input 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:		<input 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	2 boxes of samples stored in -80°C freezer
Cryo embedded tissues	Mouse origin, stored at -80°C	<input checked="" type="checkbox"/> Generate new data <input 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"/> < 1 GB <input type="checkbox"/> < 100 GB <input type="checkbox"/> < 1 TB <input type="checkbox"/> < 5 TB <input type="checkbox"/> > 5 TB <input checked="" type="checkbox"/> NA	8 boxes of samples stored in -80°C freezer

				<input type="checkbox"/> Software <input type="checkbox"/> Other:			
Cryo sections	Mouse origin	<input checked="" type="checkbox"/> Generate new data <input 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:		<input 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 checked="" type="checkbox"/> NA	15 boxes of slides stored in -20°C freezer
Protein/RNA/cDNA	Mouse origin	<input checked="" type="checkbox"/> Generate new data <input 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:		<input 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 checked="" type="checkbox"/> NA	3 boxes of samples stored in -80°C freezer
<p><b>GUIDANCE:</b>          The data description forms the basis of your entire DMP, so make sure it is detailed and complete. It includes digital and physical data and encompasses the whole spectrum ranging from raw data to processed and analysed data including analysis scripts and code. Physical data are all materials that need proper management because they are valuable, difficult to replace and/or ethical issues are associated. Materials that are not considered data in an RDM context include your own manuscripts, theses and presentations; documentation is an integral part of your datasets and should be described under documentation/metadata.</p> <p><a href="#">RDM Guidance on data</a></p>							
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.			NA				

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.	<input type="checkbox"/> Yes, human subject data; provide SMEC or EC approval number: <input checked="" type="checkbox"/> Yes, animal data; provide ECD reference number: ECDN°P140/2023 and ECDN° Creation Luttun/2023 <input type="checkbox"/> Yes, dual use; provide approval number: <input type="checkbox"/> No Additional information:
Will you process personal data <sup>4</sup> ? 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).	<input type="checkbox"/> Yes (provide PRET G-number or EC S-number below) <input checked="" type="checkbox"/> No Additional information:
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.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please comment:
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.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:
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.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:

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<sup>4</sup> See Glossary Flemish Standard Data Management Plan

### 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.](#)

Main results and methods will be published in peer-reviewed journals (open access as required by FWO regulations) and all publications will be archived in Lirias, the digital KU Leuven document repository.

All **digital data** generated in the project for each WP and associated metadata will be archived digitally and a searchable database format (Excel or Access) will be implemented. Electronic lab note books will be used and templates have been designed for writing protocols/SOPs, for excel spreadsheets for raw data and (statistical) analysis. When raw data are uploaded on repositories, keywords will be affixed along with readme files containing the needed information for reuse. In the final stage of the project, a master index file with the combined metadata for each WP will be generated and archived on a non-editable drive of the host institution KU Leuven ('K drive').

All **physical data** collected during the course of the project will be stored at designated storage places (at room temperature or frozen) and location and preservation method of the biological samples (tissues, tissue sections, blood plasma, genetic material) will be documented digitally (.xlsx files).

<p>Will a metadata standard be used to make it easier to <b>find and reuse the data</b>?</p> <p>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.</p> <p><i>REPOSITORIES COULD ASK TO DELIVER METADATA IN A CERTAIN FORMAT, WITH SPECIFIED ONTOLOGIES AND VOCABULARIES, I.E. STANDARD LISTS WITH UNIQUE IDENTIFIERS.</i></p>	<p><input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No</p> <p>If yes, please specify (where appropriate per dataset or data type) which metadata standard will be used:</p> <p>Metadata will be a combination of machine-generated and manually generated metadata. Metadata of raw images (file size, pixel number, acquisition date, settings, etc.) and qRT-PCR are captured automatically and saved on the server together with the corresponding data files. Other metadata (on quantification procedures, biochemical analysis, etc.) are mostly captured manually and logged in lab notebooks or in searchable Excel/Access databases. For these metadata, we will progressively design own metadata standards using <a href="http://dublincore.org/">http://dublincore.org/</a>. We will also consider archiving our data using general data repositories (<a href="https://figshare.com/">https://figshare.com/</a> and <a href="https://zenodo.org/">https://zenodo.org/</a>). RNAseq data will be uploaded to the GEO repository which uses the MIAME standard.</p> <p>If no, please specify (where appropriate per dataset or data type) which metadata will be created:</p>
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#### 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)
- ☐ Sharepoint online
- ☐ Sharepoint on-premis
- ☐ Large Volume Storage
- ☐ Digital Vault
- ☒ Other:

During the project, **digital data** will be stored at different locations, depending on the type of data and accessibility. Data will be stored on the researchers' computers, on the KU Leuven network editable drives where the principal investigator has reserved dedicated space for this project (the J drive for data that needs to be accessible daily and is exchangeable between KU Leuven-affiliated project participants and the L drive for longer-term storage of large data files that do not need to be frequently accessed).

All **physical data** collected during the course of the project will be stored at designated storage places. An inventory of each storage place is available.

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
- ☒ Personal back-ups I make (specify):

All of the data and documents on the researcher's computer are automatically synchronized to the KU Leuven Onedrive cloud with a capacity of up to 2TB per user. In addition, data will be stored in a designated folder on an external hardware disk (8TB).

- ☐ Other (specify):

<p>Is there currently sufficient storage &amp; 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.</p>	<p><input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No</p> <p>If no, please specify:</p>
<p>How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?</p> <p><i>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.</i></p> <p><a href="#">Guidance on security for research data</a></p>	<p><b>Digital data:</b> The KU Leuven network servers allow for secure storage of data. The access to the KU Leuven server is u-number and password controlled. KU Leuven ICTS services provide the option to control data access for authorised persons only (in this case, KU Leuven affiliated research lab members involved in this project).</p> <p>All <b>physical data</b>, printed forms and notebooks are stored in the labs in locked cabinets. Access to the lab is secured and badge controlled.</p>
<p>What are the expected costs for data storage and backup during the research project? How will these costs be covered?</p>	<p>Costs for digital data storage and back-up during the project have been included in the research budget of the project. The current cost rate for the KU Leuven network drives are: 52€/y/100Gb block (J) and 5.7€/y/100Gb block (K), 569.2€/y/5Tb block (L).</p>

## 5. Data Preservation after the end of the Research Project

<p>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...).</p> <p><a href="#">Guidance on data preservation</a></p>	<p> <input checked="" type="checkbox"/> All data will be preserved for 10 years according to KU Leuven RDM policy  <input type="checkbox"/> 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  <input type="checkbox"/> Certain data cannot be kept for 10 years (explain)         </p> <p>All <b>digital data</b> and metadata will be retained for 10 years after the project (per the requirements of Research Data Management policy of the KU Leuven). The same term will be applied to <b>physical data</b>.</p>
<p>Where will these data be archived (stored and curated for the long-term)?</p> <p><i><a href="#">Dedicated data repositories</a> 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 <a href="#">interactive KU Leuven storage guide</a>.</i></p>	<p> <input type="checkbox"/> KU Leuven RDR  <input type="checkbox"/> Large Volume Storage (longterm for large volumes)  <input type="checkbox"/> Shared network drive (J-drive)  <input checked="" type="checkbox"/> Other (specify):         </p> <p>For KU Leuven, digital data will be archived on the KU Leuven K drive for storage of read-only data.</p>
<p>What are the expected costs for data preservation during the expected retention period? How will these costs be covered?</p>	<p>For KU Leuven, cost rate for storage on the K drive is 5.7€/year/100Gb. To store a total of 5 Tb for 10 years, the estimated cost hence is 2,850 €. Costs will be allocated to the project budget.</p>



## 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/#INFO-EU-REPO-ACCESSRIGHTS](https://wiki.surfnet.nl/display/STANDARDS/INFO-EU-REPO/#INFO-EU-REPO-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:

Main findings of the research with all supporting processed data will be made available through publication in peer-reviewed journals with open access policies (as required by FWO). All manuscripts will also be deposited in the KU Leuven Lirias digital repository. Raw RNAseq data will be made available publicly upon acceptance of the manuscript. Other raw data related to published manuscripts may be available upon specific request as will be stated in a data availability statement included in the published manuscripts.

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

All KU Leuven-affiliated researchers involved in the project will have access to the data on the KU Leuven servers through their u-number and accompanying personal password.

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

If yes, please specify:

<p>Where will the data be made available? If already known, please provide a repository per dataset or data type.</p>	<p><input type="checkbox"/> KU Leuven RDR  <input checked="" type="checkbox"/> Other data repository (specify): Open Access repository  <input checked="" type="checkbox"/> Other (specify): Raw RNAseq data will be made available publicly through the GEO repository upon acceptance of the manuscript.</p>
<p>When will the data be made available?</p>	<p><input checked="" type="checkbox"/> Upon publication of research results  <input type="checkbox"/> Specific date (specify)  <input checked="" type="checkbox"/> Other (specify): Other data will be made available upon request, where considered appropriate, following publication.</p>
<p>Which data usage licenses are you going to provide? If none, please explain why.</p> <p><i>A DATA USAGE LICENSE INDICATES WHETHER THE DATA CAN BE REUSED OR NOT AND UNDER WHAT CONDITIONS. IF NO LICENSE 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.</i></p> <p>Check the <a href="#">RDR guidance on licences</a> for data and software sources code or consult the <a href="#">License selector tool</a> to help you choose.</p>	<p><input checked="" type="checkbox"/> CC-BY 4.0 (data)  <input type="checkbox"/> Data Transfer Agreement (restricted data)  <input type="checkbox"/> MIT licence (code)  <input type="checkbox"/> GNU GPL-3.0 (code)  <input type="checkbox"/> Other (specify)</p>
<p>Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, please provide it here.</p> <p><i>INDICATE WHETHER YOU INTEND TO ADD A PERSISTENT AND UNIQUE IDENTIFIER IN ORDER TO IDENTIFY AND RETRIEVE THE DATA.</i></p>	<p><input checked="" type="checkbox"/> Yes, a PID will be added upon deposit in a data repository  <input type="checkbox"/> My dataset already has a PID  <input type="checkbox"/> No</p>

What are the expected costs for data sharing? How will these costs be covered?	For sharing digital data, no sharing costs are foreseen. For sharing physical data, Material Transfer Agreements will have to be put in place which will be mutually signed. Shipping costs would be covered by either party (through the FWO budget in case of the provider) as long as the costs are low, however, significant sharing costs will be expected to be borne by the requestor. Costs related to open access publication are included in the FWO project budget.
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## 7. Responsibilities

Who will manage data documentation and metadata during the research project?	The supervisor (A. Luttun)/the grant holder (H. Kemps).
Who will manage data storage and backup during the research project?	The supervisor (A. Luttun)/the grant holder (H. Kemps).
Who will manage data preservation and sharing?	The supervisor (A. Luttun)/the grant holder (H. Kemps).
Who will update and implement this DMP?	The supervisor (A. Luttun)/the grant holder (H. Kemps).