G017525N: Unravelling the signal transduction cascade involved in the early implantation events 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	
Task 1.1 conditioned medium	collection of condition medium	New	Physical	Medium			-80°C
Task 1.1 Secretome analysis of embryos and blastoids	Metabolimic analysis of conditioned medium	New	Digital	Experimental	Excel (xlsx) R objects	< 1GB	
Task1.2. intracellular calcium imaging	Calcium imaging on hEEC	New	Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx) images/figures (tiff, png, jpg)	< 1TB	
Task 2.1 Study the effect of embryonic secretome hits on PAR2 activity	Metabolomics/ secretomics	New	Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx)	< 1TB	-80°C
a. Flex station microplate reader	Fluorescent measurements PAR2-CHO cells	New	Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx	< 1TB	
b. calcium imaging	Calcium imaging on hEEC	New	Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx) images/figures (tiff, png, jpg)	< 1TB	

c. CRISP/Cas9 technology	Genetic modification	New	Physical + Digital	Experimental	Sequencing alignment data (bam)		
d. Ex vivo imaging	Ex vivo calcium imaging in intact mouse uterus	New	Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx) images/figures (tiff, png, jpg)		< 1TB
Task 2.2 TIR-FRAP	Live imaging of protein expression Expression at the PM	New	Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx) images/figures (tiff, png, jpg)		< 1TB
Task 2.2 calcium imaging	Calcium imaging on hEEC	New	Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx) images/figures (tiff, png, jpg)	< 1TB	
Task 3.1 Transcriptomic analysis	Bulk RNA sequencing	New	Digital	Experimental			
Task 3.2 Immunohistochemistry	Histology	New	Physical + Digital	Experimental	Digital slides (images, czi) paraffin blocks		
Task 3.3 Decidualization	Co-Culture	New	Physical + Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx)	< 1 TB	-80°C
Task 3.4 Secretomics	Metabolomics of endometrium conditioned medium	New	Digital	Experimental	raw data (nd2) exported data (xlsx) analysed data (xlsx, pzfx)	< 1 TB	-80°C
Task 3.5 embryo implantation	In Vitro embryo implantation	New	Physical + Digital	Experimental	Digital slides (images, czi) paraffin blocks		

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:

not applicable

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, human subject data

Ethics Committee Research UZ / KU Leuven - Human biomaterial will be obtained following the three ethical principles (voluntary donation, informed consent and protection of privacy). This material will be used following our Center's Standard Operating.
Detailed description is provided in WP1
Procedure for the handling of human biomaterial, and in accordance with European and national regulations and guidelines.

S62765: Access to human embryos

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.

- Yes

S62765: Access to human embryos : personal data about pregnancy, age, ..

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

Potentially new biomarkers to score embryo quality could be identified

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).

Data will be generated following standardized protocols. Metadata will be documented by the research and technical staff at the time of data collection and analysis, by taking careful notes in the electronic laboratory notebook (E-notebook) and/or in hard copy lab notebooks that refer to specific datasets. elabFTW (Electronic lab notebook) is also used to store test hypothesis descriptions, solution compositions, descriptions and links to protocols related to the experiment.

- All datasets will be accompanied by a README.txt file containing all the associated metadata (see more details below).
- All data files + folders will be saved on the KU Leuven One-drive and Large Volume storage.

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

Metadata for all the work packages will be created by the instruments (eg. RT-qPCR, calcium imaging, sequencing). In other cases metadata will be collected manually according to the type of data Metadata will include the following elements:

• Title: free text
• Creator: Last name, first name, organization
• Date and time reference
• Subject: Choice of keywords and classifications
• Description: Text explaining the content of the data set and other contextual information needed for the correct interpretation of the data, the software(s) (including version number) used to produce and to read the data, the purpose of the experiment, etc.
• Format: Details of the file format

Additionally, we will closely monitor MIBBI (Minimum Information for Biological and Biomedical Investigations) for metadata For specific datasets, additional metadata will be associated with the data file as appropriate. Specific examples information on the methodology used to collect the data analytical and procedural information how raw data have been processed into other forms of data standard operating procedures (SOPs), logbooks, lab protocols parameters and instrument settings for image acquisition, measurements, models or other techniques The final dataset will be accompanied by this information under the form of a README.txt document. This file will be located in the top level directory of the dataset and will also list the contents of the other files and outline the file-naming convention used. This will allow the data to be understood by other members of the laboratory and add contextual value to the dataset for future reuse

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

Where will the data be stored?

- Large Volume Storage
- OneDrive (KU Leuven)
- Sharepoint online
- ManGO
- The data is recorded on the internal and external storage of the computers attached to equipment and is duplicated on the storage facilities of the research unit; Implantation, Placentation and pregnancy (POPPY) research group, O&N3; Digital files will be stored on KU Leuven servers
- Tissue samples: Tissues will be stored locally in the laboratory. All human tissue samples will be registered with a Belgian biobank, in compliance with the Belgian law on human body material (dd 19-12-2008).
- Omics data: omics data generated during the project will either be stored on KU Leuven servers
- Cell lines: Newly human created cell lines will be stored locally in the laboratory in liquid nitrogen storage and will be deposited in the UZ Leuven-KU Leuven Biobank. Other human cell lines will be stored locally in liquid nitrogen cryostorage of the laboratory when actively used for experiments.

How will the data be backed up?

Standard back-up provided by KU Leuven ICTS for my storage solution

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

POPPY has a LVS of 5 TB, and new block os 5TB will be purchased upon request.

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

Samples will be stored in the archive of O&N3, Campus Gasthuisberg. This room has a separate key to open the door. Access to O&N3 is controlled by electronic badge readers. The primary storage location for the data is on password-protected KU Leuven personal computers, with immediate backup to secure network-attached, redundant disk arrays managed by the lab, accessible only to selected members of the lab. Long term storage for data that does not require repeated fast access is provided by the KU Leuven ICTS' Large Volume Storage service.

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

Expected storage costs in the facility are estimated at 2000 EUR for 4 years. For backup, the current KU Leuven tariffs are approx.

175 EUR per TB per year. These costs will be covered by addition funding of the host lab.

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 data will be preserved for 10 years according to KU Leuven RDM policy

All data will be retained for at least 10 years after the end of the project. Both promoter and co-promoter will take the full responsability for data storage during the entire period

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

- Large Volume Storage (longterm for large volumes)

The data will be stored on the university's central servers (with automatic back-up procedures) for at least 10 years, conform the KU Leuven RDM policy. Samples and data will be archive of the Implantation, Placentation & Pregnancy research group (POPPY facility located in O&N3)

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

The data preservation in the research facility comes at an estimated cost of 500 to 1000 EUR. The cost of archival on KU Leuven servers is estimated to be between 4000 and 8000 EUR for the 3 years after project end. These costs will be covered by the funding of the host lab.

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 a restricted access repository (after approval, institutional access only, …)

Data is stored in the central server of KU Leuven/UZ Leuven and will be available upon request at least 5 years after the project. The information regarding this data can be found in the publications related to the project and the responsible PI (Joris Vriens) will provide the requested data.

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

Joris Vriens (promotor)

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.

- KU Leuven RDR (Research Data Repository)

Data will be available on demand after contacting promoter / co-promoter of the project.
Data will be shared under conditions of the KU Leuven

When will the data be made available?

- Upon publication of research results

Data will be available on demand after contacting promoter / co-promoter of the project.
Data will be shared under conditions of the KU Leuven

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

- Data Transfer Agreement (restricted data)

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

Yes, a PID will be added upon deposit in a data repository

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

Minimal costs are expected

6. Responsibilities

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

Phd students and lab technicians under supervision of PI

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

In our research unit, Andrei Segal Stanciu (ATP member) is the responsible person for data storage and back up.

Who will manage data preservation and sharing?

PI, Joris Vriens, is responsible for data preservation and sharing

Who will update and implement this DMP?

The PI (Joris Vriens) bears the end responsibility of updating & implementing the proposed DMP