

FWO-DMP-G093419N

Project Name FWO-DMP-G093419N - FWO-DMP-G093419N

Project Identifier DMP-G093419N

Grant Title G093419N

Principal Investigator / Researcher Isabel Beets

Project Data Contact +32 16 37 36 97, isabel.beets@kuleuven.be

Description We aim at delivering a much-needed understanding on how neuropeptide signaling in the brain influences long-term memory. Neuropeptides are small regulatory proteins that are implicated in a variety of biological processes, including learning and memory. Our hypothesis is that neuropeptides are not only key regulators of learned behaviors, but also of long-term memory processes. We recently discovered that a neuropeptide (called MIP) is required for aversive memory in the neurobiological model organism *C. elegans* and that this type of memory displays specific hallmarks of long-term memory. In this project, we will dissect the molecular and cellular mechanisms by which MIP neuropeptides modulate long-term memory. We will use recently developed tools for analyzing gene expression specifically in memory cells, to identify memory genes that are regulated by MIP signaling, and will dissect how these genes contribute to memory formation.

Institution KU Leuven

1. General Information

Name applicant

Isabel Beets

FWO Project Number & Title

G093419N, Deciphering the regulation of long-term memory by neuropeptide signaling

Affiliation

- KU Leuven

2. Data description

Will you generate/collect new data and/or make use of existing data?

- Generate new data

Describe the origin, type and format of the data (per dataset) and its (estimated) volume, ideally per objective or WP of the project. You might consider using the table in the guidance.

This research project will generate experimental data in textual, numerical, multimedia and instrument-specific formats. These data include sequences (.fastq), images (.jpg, .tiff, .lsm, .oif), videos (.avi, .stk), notebooks (hardcover), processed data files and data representations (.csv, .exe, .ai, .pds), and publication manuscripts (.pdf, .docx). The

expected total volume of digital data is between 1 terabyte (minimum) and 3 terabytes (maximum). Our experimental work will generate a diverse set of samples that will be archived and stored in our frozen stock collections (DNA and RNA samples, frozen at -20 or -80 degrees; *C. elegans* strains frozen at -80 degrees and in liquid nitrogen).

3. Legal & 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 your host institution's privacy register - not relevant yet)

- No

Privacy Registry Reference:

Short description of the kind of personal data that will be used:

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?

- No

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

4. Documentation & metadata

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

All digital data (raw and analyzed data files) will be stored on Desktop File Storage and Large Volume Storage. Digital files will be organized in folders per research objective and experiment, including a txt file with a clear description of what the data represent and how they were generated. Experimental procedures will be fully documented as word files and in hardcover notebooks. RNA-Seq reads will be deposited in the NCBI Sequence read archive after publication. Details on samples, including plasmid maps and strain genotypes, will be archived in excel files with an overview of their location in frozen stock collections.

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

Biological imaging data will be stored following the OME (Open Microscopy Environment) standard to encode metadata on light microscopy experiments in image files. For RNA-Seq data the metadata guidelines from the NCBI Sequence read archive will be followed. Metadata about strain and plasmid collections will be created manually, following the community guidelines as published on the Nomenclature section of the community resource Wormbase (www.wormbase.org).

5. Data storage & back up during the FWO project

Where will the data be stored?

During the research, all digital data will be stored on Desktop File Storage. The ICT team of the Biology Department will facilitate the technical infrastructure and authentication to access stored files through KU Leuven's Active Directory (Luna). Hardcover notebooks will be kept personally by all researchers involved during the project, and by the PI after the end of the project. Samples will be stored in central stock collections of the lab.

How is back up of the data provided?

Network storages (fee-based) for digital data are hosted in the KU Leuven ICTS data center, with incremental backups on at least a daily basis. All data is mirrored to a second ICTS data center.

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

Network storages for digital data hosted by the KU Leuven ICTS data center can provide sufficient storage and back-up capacity (fee-based).

What are the expected costs for data storage and back up during the project?

How will these costs be covered?

Expected costs for data storage and back-up during the project are estimated 1000 EUR, which will be covered by the allocated FWO project budget.

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

We will not be working with personal, confidential or sensitive data but will ensure data security by storing data at secured KU Leuven Network storages and buildings.

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, including digital files and samples, will be stored at least 5 years after the end of the project.

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

After the research, digital data will be archived for at least 5 years on Large Volume Storage hosted in the KU Leuven ICTS data center with automatic back-up procedures. Samples will be kept for long-term storage in frozen stock collections (-80 freezer or liquid nitrogen).

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

Expected costs for data storage and back-up after the project are estimated at 1000 EUR, which will be covered by research grant budgets.

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?

Digital data and samples resulting from this project will be made available after publication of results.

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

- In an Open Access repository
- In a restricted access repository
- Upon request by mail

Publications resulting from this project will be archived in the KU Leuven Lirias 2.0 repository. RNA-Seq reads will be deposited in the NCBI Sequence read archive after publication. Samples can be requested from the principal investigator by mail.

When will the data be made available?

- Upon publication of the research results

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

Data will be available to anyone after publication of the research results.

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

Expected costs for data sharing encompass publication fees, which will be covered by

the allocated FWO project budget.

8. Responsibilities

Who will be responsible for data documentation & metadata?

The principal investigator and all research staff involved in the project will be responsible for data documentation.

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

The principal investigator and all research staff involved in the project will be responsible for data storage and back-up.

Who will be responsible for ensuring data preservation and reuse ?

The principal investigator will be responsible for ensuring data preservation and reuse.

Who bears the end responsibility for updating & implementing this DMP?

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