Building high-efficiency bioinspired transmembrane nanomotors

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.

Dataset name / ID	Description	New or reuse	Digital or Physical data	Data Type	File format	Data volume	Physical volume
		Indicate: ***N****(ew data) or* ***E****(xisting data)*	Indicate: **D**(igital) or **P**(hysical)	Indicate: **A**udiovisual **I**mages **S**ound **N**umerical **T**extual **M**odel **SO**ftware **O**ther (specify)		Indicate: <1GB <100GB <1TB <5TB >5TB NA	
microscopy images	microscopic imaging data	N	D	I	binary or TIFF	> 5TB	
electrophysiology	electrophysiology data	N	D	N	binary	>5TB	
gel images	gel images	N	D	I	TIFF	<100GB	

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.

- No

Will you process personal data? 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

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

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 raw data set will be accompanied by lab journals. Microscopy data are accompanied by metadata descriptions, usually a .txt file. Published data will be accompanied by dataset descriptions and appropriate licenses for reuse.

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.

- No

The metadata stored together with image data includes technical information such as experiment data, exposure time, binning, camera gain, etc.

Data Storage & Back-up during the Research Project

Where will the data be stored?

- ManGO
- Large Volume Storage
- Other (specify below)

Data included in published papers will be released on Zenodo (https://zenodo.org/) or KU Leuven RDR (https://rdr.kuleuven.be/)

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 no or insufficient storage or backup capacities are available, explain how this will be taken care of.

- Yes

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

The raw research data are stored on KU Leuven's large-volume storage. The data folder is accessible only to lab members.

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

KU Leuven ICT charges about 100 Euros/TB/year for large-volume storage service. We expect to need, on average, 10TB per year over 4 years of the project, which will be about 4000 euros for data storage, which is included in the budget.

Data Preservation after the end of the Research Project

Which data will be retained for 10 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...).

- Certain data cannot be kept for 10 years (explain below)

All data directly related to publications will be preserved for 10 years on Zenodo (https://zenodo.org/) or KU Leuven RDR (https://rdr.kuleuven.be/)

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

- Large Volume Storage (longterm for large volumes)
- KU Leuven RDR

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

Data directly related to publications will be preserved on Zenodo (https://zenodo.org/) or KU Leuven RDR (https://rdr.kuleuven.be/) free of charge.

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.

- Yes, as open data

All data directly related to publications will be released on Zenodo (https://zenodo.org/) or KU Leuven RDR

(https://rdr.kuleuven.be/) for open access. An appropriate license will be chosen for the release.

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

NA

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

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)
- Other data repository (specify below)

Zenodo (https://zenodo.org/)

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.

- Data Transfer Agreement (restricted data)
- CC-BY 4.0 (data)
- MIT licence (code)

Do you intend to add a persistent identifier (PID) to your dataset(s), e.g. a DOI or accession number? If already available, please provide it here.

- 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?

Both Zenodo (https://zenodo.org/) and KU Leuven RDR (https://rdr.kuleuven.be/) are free of charge.

Responsibilities

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

The researchers who directly conduct the research and experiments.

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

The researchers who directly conduct the research and experiments.

Who will manage data preservation and sharing?

The researchers who directly conduct the research and experiments.

Who will update and implement this DMP?

The PI of the project.