DMP title

Project Name C3 2021

Project Identifier Single cell forensics

Grant Title C3/21/033

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Description Title: Single cell sorting and DNA profiling for complex forensic casework. Crime scene and rape kit samples often contain cells from multiple donors leading to complex DNA mixtures. Various methods have been developed in all stages of the process including differential extraction to separate epithelial from sperm cells and the deconvolution of the mixtures using probabilistic genotyping. Despite all efforts, partial profiles and complex mixtures still all too often compromise the resolution of cases leaving victims out in the cold. Recent technological advancements such as micromanipulation and strategies such as the binomial/multinomial sampling approach have shown promise towards solving the obstacle of DNA mixture interpretation. The proposed study has 3 main aims: (i) improve success rates of existing single cell methods for forensic applications through nucleated cell selection (ii) carry out a feasibility study for the practical application in routine workflows and (iii) perform a proof of concept study through the analysis of mock casework samples.

Institution KU Leuven

1. Data Description

What data will you collect or create? Fill out the table below and/or describe.

Type of data	Format	Volume	How created?
Microscopy images	jpeg, gif	1-2 GB	single sperm cells sorted using f.sight
Microscopy images	jpeg, gif	1-2 G	epithelial cells visualised using a Dino-Lite microscope
DNA profiles	.epg	<1 GB	STR DNA profiles obtained from sperm and epithelial cells

Do you intend to reuse existing data?

No

Do you use personal data (i.e. all data possibly identifying an individual)?

- No

2. Documentation and Metadata

Describe the documentation that will be created for the data. This section deals

with the way in which you will document how the dataset was created and subsequently processed.

1. Pictures will be taken from semen and epithelial cells using either a single cell sorter or a microscope. The methodology (including parameter settings) and protocol will be described in detail in the lab book.
2. DNA profiles will be generated and analysed using designated software. DNA-profiles are produced as .epg files and will be stored into GeneMarker project files (.SGF).

Describe the metadata for the data. This section deals with metadata: information contained in your dataset about the research data.

Metadata generated by instruments will be stored in specific metadata folders per instrument.

3. Ethical, Legal and Privacy Issues

Are there any ethical issues concerning the creation and/or use of the data?

An application to the EC Research of UZ Leuven has been submitted.

Did you consider all issues about copyrights and IPR?

No copyrights will be violated during this research project.

Are the collected data considered to be â€œdata containing personal informationâ€ and are all the requirements about the collection of these data met?

NA

4. Data storage and Backup during Research

How and where will the data be stored during research?

- Centrally on storage facilities of the research unit

All data will be stored on the UZ Leuven firewall protected and double backed-up network.

Which back-up procedures are in place?

The data will be stored on the hospital(s central servers with automatic hrouly back-up procedures.

Describe the data security procedures and who has access to the data.

A specific research folder will be created under the main folder of the department. The designated folder will only be accessible by the researchers directly involved with the project. No personal data will be stored within these folders.

5. Data selection and Preservation after Research

What is the long-term preservation plan for these dataset(s)?

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.

Data Selection: Which data will have long time value for the research and will be preserved?

None past 10 years due to ease of reproduction by then.

6. Data Sharing

Are there any restrictions for sharing the data?

No data will be shared nor reused.

If there are no restrictions, which mechanisms will be in place to assure that the data are discoverable, accessible and intelligible?

NA

How will you share the data?

NA

With whom will the data be shared?

NA

7. Responsabilities and Resources

Who is responsible for Data Management during the project? This will be the person who might receive questions on the data management aspects of the research project.

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

Which additional resources are needed for the execution of the Data Management Plan?

None

Did you read the KU Leuven Data Management Policy? (find the link to the policy in the guidance).

- Yes