REVEALING THE CANCER CELL-INTRINSIC IMMUNOTHERAPY TARGETS IN GLIOBLASTOMA USING REVERSE TRANSLATIONAL APPROACHES.

A Data Management Plan created using DMPonline.be

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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 Other (specify)		Indicate: <1GB <100GB <1TB <5TB >5TB NA	
FACS data	.fcs files from flow cytometers, .xml tables after FlowJo analysis	N	D	N	.fcs .xlsx	<100GB	
Plate reader measurement	Absorbance, Luminescence, fluorescence readubgs	N	D	N	.xlsx	<1GB	
Mouse survival data	survival points	N	D	N	.xlsx	<1GB	
Genomics data	RNAseq of patient samples	E	D	N	.csv .h5ad .xlsx	<1TB	
Biological samples	Cell lysates etc.	N	P	NA	NA	NA	<100 vials
Cell lines	Crispr-cas KO cells	N	P	NA	NA	NA	<100 vials
Digital Images	Western blot, MILAN	N	D	I	.tiffs .snc .png	<100 GB	

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:

samples under S-59804 and S-61081

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.

- Yes, human subject data (Provide SMEC or EC approval number below)
- Yes, animal data (Provide ECD reference number below)

Human samples: S-59804 and S-61081
Mouse samples: P155/2021

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.

- Yes

We don't exclude that the proposed work could result in research data with potential for tech transfer and valorization. If there is substantial potential, the invention will be thoroughly assessed, and in several cases the invention will be IP protected (mostly patent protection or copyright protection). As such the IP protection does not withhold the research data from being made public. In the case a decision is taken to file a patent application it will be planned so that publications don't need to be delayed.

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).

Documentation will consist of electronic laboratory records, that contain all of the information of the performed experiment itself (Excel sheetbased metadata files). Those notes will describe the biological samples used/generated, experimental setup and protocols used, results generated, the links to the specific computer location as well as the names of the respective datasets. We will also maintain a metadata sheet with the connection between lab samples and files on our data storage, so that data files, lab samples, and experimental notes remain properly linked. Detailed protocols will be written, including research methods and practices for each experimental initiative. This will be stored in Word or Excel files. Furthermore, a logbook will be kept in Excel containing all steps that were taken to develop the final methodology, date of implementation and name of the researcher who carried out the experiment. Algorithms, scripts and software usage will be documented and stored alongside the electronic laboratory records, e.g. GraphPad Prism, FlowJo. Finally, we will also keep all the information (in dedicated Excel sheets, PDFs or Word-files) about purchased antibodies, cell-lines, mouse models and other analogue data-sources. Other relevant information about these reagents and tools (e.g., proof of antibody specificity) will be derived from initial standardization and optimization experiments and will be retained along with general research documentation/meta-data files.

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.

- Yes

We will use various metadata standards as applicable for different experiment/datatypes, as already established elsewhere: https://fairsharing.org/. For instance, flow cytometry (https://flowrepository.org/), microscopy imaging (https://www.openmicroscopy.org/), qRT-PCR (http://miqe.gene-quantification.info/), and publicly available TCGA patient data analyses (https://gdc.cancer.gov/aboutdata/ data-

standards) have very well-defined pre-established meta-data standards. In case we do not have a metadata standard available for a technique/datatype, a metadata of the numerical datasets will be created manually (e.g. based on the Dublin core metadata standard). For most of the data, metadata will be provided as readme, word or excel files, containing all settings and technical descriptions of the experiment and data. In parallel, detailed meta-data info will be integrated within the electronic laboratory records linked to each experiment (as described above)

Data Storage & Back-up during the Research Project

Where will the data be stored?

- OneDrive (KU Leuven)
- Large Volume Storage
- Shared network drive (J-drive)
- Other (specify below)

Digital files will be stored on KU Leuven data storage servers. All data generated during the project will be stored on the local KU Leuven servers, PI computers, and backup hard drives, as well as on a local RAID storage available in the office. This will be initially located in the real-time folders (on lab provided laptops/PCs of the students or employees and local KU Leuven servers) and later only in the archive folders (archive is mirrored; on local KU Leuven servers, backup hard-drives as well as PI computers). Any algorithms, scripts or softwares originally generated during the project will be stored in private online git repositories of the PIs. As soon as the manuscript is publicly available, the repository will be changed to a public repository. Specific biological samples (e.g. cell lysates, protein/nucleic acid samples) will be stored in a freezer (-20°C or -80°C) while cell lines will be stored in liquid nitrogen.

How will the data be backed up?

- Standard back-up provided by KU Leuven ICTS for my storage solution
- Personal back-ups I make (specify below)

Digital data will be stored on the university's secure network drives with automatic daily back-up procedures (e.g. JDrive for confidential data and KUL Enterprise Box for non-confidential data. Data is also stored as a backup on lab computers, external hard drives, and on a local RAID 50 system in the office.

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 "J-drive" and "KUL Enterprise Box" servers are accessible only by laboratory members and PIs. Local storage systems like the RAID system and external hard drives are not accessible remotely and password protected.

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

The total estimated cost of data storage during the project is 500 EUR. This estimation is based on the following costs: - The costs of digital data storage are as follows: approximately 52 EUR/100 GB/Year for the "J-drive" and approximately 10 EUR/100 GB/Year for the "KUL Enterprise Box".

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...).

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

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

- Large Volume Storage (longterm for large volumes)
- Shared network drive (J-drive)

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

KU Leuven long term storage/large volume storage should cost around 100€/TB/year. The total volume of relevant data to be stored is expected to be significantly under that. The costs for archival data will be paid upfront from the FWO project funds.

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
- Yes, as restricted data (upon approval, or institutional access only)

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

Access to data will be granted upon request.

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.

- Other (specify below)

Digital data will be made publicly available as per the journals' data availability policy, or available upon email request to the PI. Data that do not support publication will be made available upon reasonable request by email.

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.

- CC-BY 4.0 (data)

Creative Commons Licenses (CC BY) will be attached to the data deposited.

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

DOI when published.

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

No costs are expected for data sharing.

Responsibilities

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

The Postdoctoral researcher and technician associated with this project will be responsible for data documentation & metadata, under supervision of the PI.

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

Data management, storage and back up will be performed by the Postdoctoral researcher and technician associated with this project, under supervision of the PI.

Who will manage data preservation and sharing?

The PI (Prof. Abhishek D Garg) will be responsible to ensure data preservation and reuse.

Who will update and implement this DMP?

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