Deliverable 1.1: Data Management Plan

Date: 06/04/2023

Doc. Version: Version

The GEMSTONE Project has received funding from the European Union's Horizon Europe research and innovation programme under the grant agreement number 1010789881.

HISTORY OF CHANGES		
Version	**Publication date**	**Changes**
1.0	06.04.2023	Initial version

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Action Number: [HORIZON Coordination and Support Action]

Action Acronym: [HORIZON-WIDERA-2021-ACCESS-03]
Action title: [GEMSTONE- Genetically Engineering Experimental Models: Enhancement of Scientific and Technological excellence and innOvation potential to study NEurodevelopmental diseases]

Date: [06.04.2023]

DMP version: [Version 1]

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Document Control Information	
Settings	**Value**
Document Title:	Data Management Plan
Deliverable number	1.1
Project Title:	Genetically Engineering Experimental Models: Enhancement of Scientific and Technological Excellence an Innovation Potential to Study Neurodevelopmental Diseases
Document Author:	Sinem Bagce (ACU)
Project Owner	Prof. Dr. Filiz Onat, ACU (Coordinator), Deniz Kirik, ULUND, Serena Cogoni, ICONS
Doc. Version:	Version
Sensitivity:	Public, Basic, High
Date:	06/04/2023

Document Approver(s) and Reviewer(s):			
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The GEMSTONE Project has received funding from the European Union's Horizon Europe research and innovation programme under the grant agreement number 1010789881.

EXECUTIVE SUMMARY

The GEMSTONE project aims to enhance scientific research and innovative capacity in genetically engineering technologies and neuroscience at Acibadem Mehmet Ali Aydinlar University (ACU) in Turkey, with a focus on neurodevelopmental aspects of brain disorders like Parkinson's disease and epilepsy. The project targets to strengthen collaboration with a high-ranking European academic institution (ULUND) and a non-profit organization (ICONS) to create opportunities for the bilateral exchange of scientific knowledge and technical skills.

The project will result in increased scientific productivity, participation in conferences and grants, and networking and collaboration opportunities for ACU researchers in neuroscience. The project will also support ACU young researchers to express their potential by providing the necessary knowledge and skills to guide them in submitting successful grant applications and communicating and exploiting their research results. Moreover, the project will collect best practices for research management and support services in administration units at ACU. Through the Best Practice Book and collaboration networking activities, the GEMSTONE team targets to disseminate experiences to other universities and governments in Widening countries. Ultimately, the GEMSTONE project aims to decrease disparities between ACU and the European level in terms of research capacity and management.

In order to ensure proper data management in Horizon Europe**, this deliverable report (D1.1) will provide dedicated preservation for each dataset collected in research activities and provide all relevant information**, such as ***metadata usage, data formats, and ethical considerations***. **Based on the ethical standards set by Horizon Europe and national data privacy regulations will be ensured during the collection and processing of personal data, too.**

The Horizon Europe Model Grant Agreement mandates the structure and update of a regular data management plan (DMP). It is recommended that Horizon Europe beneficiaries use a template for this purpose. Therefore, we have prepared our first DMP based on the template includes sections that address the requirements for research data management in Horizon Europe. The DMP will be regularly updated to ensure compliance with the evolving requirements and policies of the grant agreement.

In the DMP first draft, we tried to present **a brief introduction to our perspective on data management and a roadmap to improve the quality of data to reach the FAIR principles, to consider data security, allocation of resources and ethical concerns.** Since the DMP is defined as a living document, after the first release of DMP, it will be updated in the17th month of GEMSTONE with D1.3 DMP (interim review) and at the end of GEMSTONE, in the 36th month, D1.4 DMP (final version). After the approval of DMP deliverables, we will release them on our website to make them public.

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1. Data Summary

GEMSTONE is a Horizon Europe project in the Coordination and Support Action (CSA). On the other hand, with a new dimension in Horizon Europe, twinning projects might have a research component. In GEMSTONE, **Work Package 2 (WP2) contains conducting laboratory or experimental research to generate primary data (the original research data)**. The project also aims **to facilitate the transfer of state-of-the-art experimental and theoretical techniques using existing scientific data,** as part of its efforts to exchange scientific knowledge and data.

Apart from the research component (WP2), various types of data will also be collected and generated in the context of the project's capacity-building Work Packages (WPs), such as WP3, WP4, and WP5. These data will be used in dissemination and exploitation activities in WP6. We can describe these data on project management and coordination as the gathered for all the procedures of the WPs. This process also includes the data generated through communication with the project partners, as well as the data generated by the consortium meetings and the reporting data related to project management. In addition, **the project's twinning activities will also produce a pool of science data and *re-useable primary data* in collaboration with GEMSTONE and capacity-building.**

As it is identified, there are two types of data in GEMSTONE, **(1) Primary research data generated under WP2, (2) Managerial and capacity-building data**. We should add that as it is in all projects, there are personal data generated in management and twinning activities[1].

Our project's data management life cycle will follow the standardized stages in Figure 1. First of all, our researchers decide what kind of data they need to collect and how they can store these datasets. Next, they start to collect the data in a careful and accurate way. Then, in an appropriate way, they clean up the data and prepare it for their scientific analysis. **We plan to use Mosaic Vivarium to store the data and provide the data transfer between Lund University and Acıbadem University**. After that, they will analyse the data to see if they can find any patterns or relationships between the variables. Finally, the researchers will store the data in a safe and easy-to-access way based on the standardized open-access classifications. Therefore, the data can be reusable again in the future. For the final stage of data management, they will need to know how long they should keep the data and in which storage they can preserve it. By following these stages, our researchers can be sure that their data has high quality in FAIR principles.

All of our data can be summarized as follows; transgenic mice dataset for novel therapeutic strategies, SOP (standard operative procedures), research data reports, datasets for the report on short-term visits, training material and booklets of knowledge and soft skills training, competences and skills matrix for research project office, report on mapping exercise, plan of mentorship activities, database and roadmap of funding opportunities and best practice book

The Project Manager is accountable for maintaining the confidentiality of personal data and ensuring secure storage on GEMSTONE hardware. In compliance with **the national personal data protection law (KVKK), we utilize a standard consent form** at Acıbadem University for all meeting participants.

To have FAIR data, we need well-designed documentation of data sources and methods, using appropriate data formats and research field standards. Moreover, it is important to ensure data security and privacy, and preservation for reusability.

[1] Turkey is subject to the General Data Protection Regulation (GDPR). Although Turkey is not a member of the European Union, the GDPR applies to any business or organization that processes personal data of individuals in the EU, regardless of where the processing takes place. This means that if a Turkish company handles the personal data of EU citizens, it must comply with the GDPR requirements. Additionally, the Turkish Data Protection Law, which is based on the EU's data protection framework, also governs the processing of personal data in Turkey.

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Under the context of the reporting data generated by project management activities includes the data originating from meetings with the stakeholders from the medical industry and healthcare institutions, as well as by capacity-building activities. For instance, in WP5, data on workshops and seminars for early-stage researchers will be compiled. The evaluation forms answered by the attendants are included in re-useable data, too.

The objective of reusing capacity-building data is to enhance the value of the data based on its original purposes. The Best Practice Book as the final output of our project presents the methodology and the metadata openly accessible. To achieve a high data utility perspective, by making these data available for reuse with open access outputs, they can provide insights and benefits beyond the scope of the project. For instance, the evaluation forms could be used to assess the effectiveness of capacity-building activities. It provides to improve the impact of future events and enhance the contents of training materials based on target groups' needs and expectations. These data could also be used for research and analysis, contributing to scientific knowledge in relevant fields, such as research innovation management. Reusing capacity-building data can also promote collaboration and knowledge-sharing among stakeholders, increasing the impact and visibility of the project.

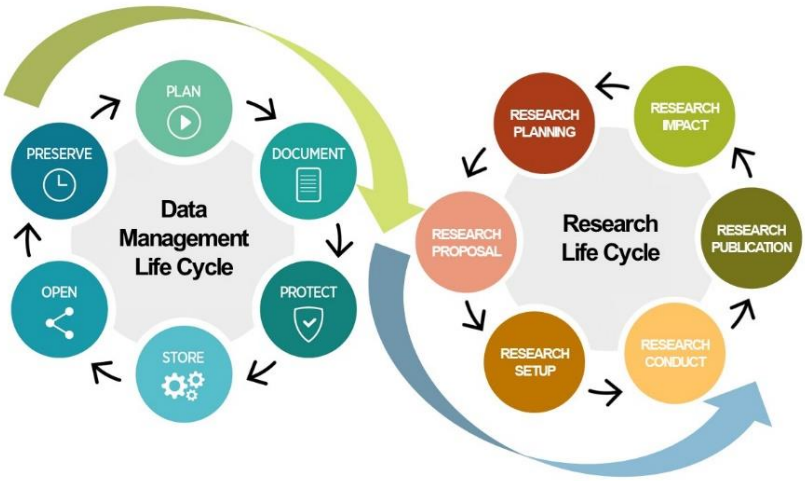

Figure 1. Research Life Cycle and Data Management Life Cycle as separate but synchronous processes. CC-BY UH Data Support[2].

Finally, the project will employ key performance indicators to assess the scientific and organisational improvement and impacts of the GEMSTONE initiatives. **To obtain all relevant information on the project's data, a specific table will be created for each dataset and shared with consortium partners**. This table contains comprehensive details such as the description of the data, partners' responsibilities, metadata usage, data format definitions, and provisions to promote FAIR data. Additionally, it addresses data security and ethical concerns. *Annex I* of this deliverable provides introductory information on each type of dataset, such as research data and managerial and capacity-building data. *Annex I* lists the meetings, workshops, and summer schools associated with the GEMSTONE project.

Concerning the collection and processing of personal data that will occur during the project's twinning activities, communication, and other dissemination activities, the project team will comply with ethical standards set by Horizon Europe (legislation EU Directive 2010/63/EU), the General Data Protection Regulation of the European Parliament and Council (GDPR, 2016/679), and national data privacy regulations, Personal Data Protection Law (KVKK)[3].

[2] https://blogs.helsinki.fi/thinkopen/know-your-data-rdm-series-1/
[3] https://www.kvkk.gov.tr/en/

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2. FAIR data

2.1. Making data findable, including provisions for metadata

The GEMSTONE project aims to generate **FAIR data**, meaning that the data produced will be **Findable, Accessible, Interoperable, and Reusable**. The project acknowledges the need to consider data privacy requirements, particularly the protection of personal data, in compliance with the EU General Data Protection Regulation 2016/679. To make the data findable, metadata will be used, and the partners have agreed to provide relevant metadata and keywords. **Metadata provides clear version numbers that be included through an automated process in the project repository, and standard naming conventions will be defined to ensure easy discoverability of the data.**

Regarding **data accessibility**, the consortium partners have identified which data can be made openly available and which cannot be shared or need to be shared under restriction, along with the reasons. Future versions of the DMP will provide more details on the accessibility of the data, **including the specific address information on the repository, methods, and tools required to access the data.** The consortium aims to use both the project website (www.gemstoneproject.eu) and the easily accessible repository, **Acıbadem University Open Access Repository** as a repository ensuring that anyone interested can easily access the data.

The project also takes provisions to make the **data interoperable**, making it **easier to exchange and reuse across research institutions and organizations.** The consortium strives to make all open data interoperable to facilitate its exchange and reuse. The GEMSTONE project also aims to increase the re-use of capacity-building data generated in WP4 and WP5 (except the personal data) by making public content available through the project website for download and re-use without any restrictions or embargo. This will promote the sharing and reuse of data among interested parties and researchers.

Regarding the allocation of resources, the costs associated with data collection and storage are under the activities covered by the grant agreement. The partners contribute the work packages and the authors of individual research studies or deliverables will be responsible for managing the data underlying GEMSTONE activities. This ensures accountability and proper management of the data generated throughout the project, facilitating its accessibility reuse-use by other researchers and interested parties.

The data will be identified by a persistent identifier at Acıbadem University Open Access Repository which has Handle integration (the Access link: https://openaccess.acibadem.edu.tr/). The Handle System is the Corporation for National Research Initiatives' proprietary registry assigning persistent identifiers, or handles, to information resources, and resolving those handles into the information necessary to locate, access, and otherwise make use of the resources. **The metadata of the research component will be offered in Acıbadem University Open Access Repository is harvested on OpenAire.**

2.2. Making data accessible

Repository: **Acıbadem University Open Access Repository**. The data generated in the Genetically Engineering Experimental Models project will be deposited in a trusted repository**. The repository's servers are owned by Acıbadem University and security is ensured by the Information Technologies Directorate and the data is backed up.** Different repositories have been evaluated and others are still under evaluation. Potential appropriate arrangements will be explored with the identified repository to ensure the **FAIR principles are based on GDPR.** The repository ensures that the data is assigned a persistent identifier and that the identifier can be resolved to a digital object.

Data: The project team aims to make all data openly available unless there are legal or contractual reasons or

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intentional restrictions that prevent their sharing**.** In such cases, these reasons will be clearly explained and documented, separating them from any legitimate interests of specific beneficiaries or other constraints outlined in the Grant Agreement. **All non-sensitive data will be freely accessible. If an embargo is applied, it will be justified based on the need to publish and seek the protection of intellectual property, and a specific timeframe will be established, taking into consideration that research data should be made available as soon as possible.**

The data will be accessible through a free and standardized access protocol, which will be clearly defined in the second DMP in the 17th month. **If there are restrictions on use, access to the data will be provided during and after the end of the project. There is no sensitive data in research side, while we have personal data in the capacity building side.**

The documented phases of a DMP (see Figure 2) include data acquisition, which involves identifying the sources and the methods for obtaining data and data description. Data description contains creating metadata and documentation to facilitate understanding and use of the data; data curation. This stage involves ensuring the data remains accessible, usable, and understandable over the long term; and ethics. Ethical concerns encompass the issues such as privacy, confidentiality, and security of data. These phases aim to promote responsible data management practices and enable the sharing, reuse, and reproducibility of research data.

Figure 2. Documented phases of the DMP

Metadata: The metadata associated with the data generated in the project will be made **openly available and licensed** under **a public domain dedication CC0**, as required by the grant agreement. The metadata will cover the information that enables users to read the data, including any necessary details on the repository, methods, and tools necessary to access the data. **The metadata will be made openly available and licensed. Both data and metadata stored in Acıbadem University Open Access Repository will remain available indefinitely at harvested on OpenAire.**

The data will remain available and findable for as long as it is reasonable and feasible. In case the data are no longer available, the metadata will be guaranteed to remain available to ensure that the context and description of the data can still be accessed and understood. Moreover, in the case of intellectual property rights needed to be preserved, **it is considered correct to at least add the tag and CC license to the archive.**

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As per the Horizon Europe guidelines, it is important to provide information on any software that is necessary to access or read the data. This can include documentation or references to the software, as well as instructions on how to access and use the software. In addition, **if the software is open-source code, it is possible to include it along with the data to facilitate its reuse and replication by others**. Providing access to the software can help to ensure that the data can be interpreted and analysed properly and that others can build on the research and results generated from the data.

All WP2 related data are classified as confidential and therefore cannot be shared freely. We intend that all valuable data produced by the project will contribute to publications. Accordingly, data will be made available on the publication date of the associated article. All our methods will be freely available with documentation in available repositories, such as GitHub or GEMSTONE website

2.3. Making data interoperable

The research work package in the proposal does not provide explicit information on data and metadata vocabularies, standards, formats or methodologies to make the data interoperable. However, **Task 2.7 mentions the use of the European Data Format (EDF) for storing and processing EEG data.**

The research work package mentioned in Task 2.3 involves monitoring the neurodevelopment of cortical layer neurons in GAERS (Genetic Absence Epilepsy Rats from Strasbourg). This will be done by evaluating time domain changes of cortical circuitry and cortical projections in coronal brain sections derived from GAERS rats at different developmental stages - postnatal day (P) 0, P7, P21, and adults. The data generated from this task will likely include information on the morphological and functional changes in cortical circuitry and projections during neurodevelopment in GAERS rats. **This covers the EEG data and imaging data obtained** from IHC) experiments. The data are typically stored as numerical arrays in LabChart Data File (adicht) format (which is easily converted to another format (such as Matlab*. mat format). The raw data are also readily made accessible in European Data Format (EDF) format with no loss of essential information. To make this data interoperable, the research team will meaningfully organise the data with appropriate file headers and filenames, corresponding to the date, experimental condition and animal ID.
Finally, the research data generated from Task 2.3 will be included in the qualified references to other data, such as other data from the GEMSTONE project or datasets from previous research. This will help provide context for the data and enable other researchers to build upon it in future studies. Based on the information provided **in Task 3.2, it appears that the project will involve the acquisition and management of various types of data, including genetic, electrophysiological, imaging, and biochemical data**. To provide interoperability of these data, the project team will endorse the FAIR principles (Findable, Accessible, Interoperable, and Reusable) and the use of standard vocabularies and formats.

To ensure that our data can be re-used by as many researchers as possible, data will be stored and made available in line with standard practices. All data will be well described and supported with clear documentation, which describes variable names and abbreviations. We will also take advice from data centres on relevant metadata standards and documentation. If it is necessary to use project-specific ontologies or vocabularies, the project team should provide mappings to more commonly used ontologies to ensure interoperability with other datasets.

Qualified references to other data, will not be included in the project's DMP. Primary data will be enabled to be integrated and reused by other researchers. **The project team considers using persistent identifiers, such as Digital Object Identifiers (DOIs) via Acıbadem University Open Access Repository. Therefore, the data and references can be easily cited and attributed.** Finally, the project team should openly publish the generated ontologies or vocabularies to allow for their reuse, refinement, and extension by other researchers.

For work packages WP4, WP5, and WP6, the project will follow an interoperable way of using standardized data and

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metadata vocabularies, formats, and methodologies. **For WP4, Task 4.1, the data related to research support staff's competencies and skills, roles and responsibilities, level of support, internal policies, and practices will be collected from the ACU and ULUND units.** The project will analyse the data collected to identify areas that need to be reinforced and plan training interventions for ACU research support staff.

For WP5, Task 5.1, the project will provide training opportunities for ACU academic staff and early-stage researchers to improve their scientific writing skills and reinforce their ability to write competitive grant proposals. Moreover, for research support staff, the project tries to generate communication and exploitation strategies to improve the impact of scientific results based on different audiences. The project will also identify and analyse funding opportunities and prioritize them according to specific parameters such as the deadline, appropriateness, level of funding, and number and extent of collaborations required. The project will organize networking activities to establish new collaborations and partnerships.

Overall, the project will ensure that its data and metadata are interoperable, follow community-endorsed interoperability best practices, use common vocabularies, and provide qualified references to other data. **If uncommon or project-specific ontologies or vocabularies are used, the project will provide mappings to more commonly used ontologies and openly publish the generated ontologies or vocabularies to allow reusing, refining or extending them.**

2.4. Increase data re-use

According to the Horizon Europe guidelines, providing appropriate documentation for data analysis is a critical aspect of data management. **To ensure the validation of data analysis and data reuse, we will create detailed readme files with metadata, information on methodology, codebooks, data cleaning, analyses, variable definitions, units of measurement, and any other relevant information necessary to understand the data.** This documentation will be provided in a standardized format and will be made available alongside the data.

We plan to make our data freely available in the ACU storage to the permit possible widest re-use opportunities. To this end, **we ensure that our data is licensed using standard reuse licenses, which are accurate with the obligations set out in the grant agreement.** We recognize that ensuring data is accessible and reusable beyond the life of the project is important, and therefore, **we will make the data produced in the project useable by third parties, particularly after the end of the project.** Additionally, we will develop codebooks that describe the structure and contents of the datasets. These materials will be made available to the public along with the datasets and will be maintained and updated as necessary throughout the project's duration.

Data quality assurance is crucial in data accuracy with objectives and reliability. **Though addressing reusing, in the second DMP, we will implement a range of quality assurance processes** that will cover all stages of the data lifecycle, including data collection, storage, processing, analysis, and dissemination. These processes will include but are not limited to, data cleaning, validation, and verification, as well as the use of appropriate statistical methods to detect and correct errors.

In addition to addressing data management, Horizon Europe requires that DMPs consider the accessibility of other research outputs, such as publications, software, and other research materials. Furthermore, Horizon Europe expects to see resource allocation, data security, and ethical aspects, including data protection and privacy concerns in a DMP. Therefore, we will carefully consider these aspects and include appropriate measurements in our second DMP to ensure the highest standards of data management and ethical practices.

GEMSTONE project will document the provenance of the data using appropriate standards, which provides a standard model for representing and sharing provenance information. We will also use metadata standards to describe the data and its provenance. This information will be made available along with the data and will facilitate the data's re-use and validation.

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GEMSTONE project will follow a data quality assurance process to ensure the accuracy, completeness, and consistency of the data. These processes will include data cleaning procedures to remove errors and inconsistencies in the data, quality control measures to identify outliers and data anomalies, and data validation checks to ensure that the data conforms to the expected format and structure. Additionally**, we will use statistical techniques to identify and correct for bias in the data and to assess the data's representativeness and generalizability.**

GEMSTONE project's DMP will address not only data but also other research outputs, such as software, models, and publications. We will carefully consider the allocation of resources to ensure that adequate funding and staffing are available to manage and preserve the data and other research outputs. Additionally, we will implement appropriate data security measures to protect the data from unauthorized access and loss.

GEMSTONE project will adhere to the FAIR principles, which recommend that data be made findable, accessible, interoperable, and reusable. **To achieve this goal, we will make our data freely available in the public domain through a suitable repository Acıbadem University Open Access Repository applies Handle identifiers to data sets.** The data will be released under an open license, such as the Creative Commons Attribution License (CC BY)[4], which permits the widest possible re-use of the data while ensuring proper attribution to the source.

GEMSTONE project is committed to making the data produced in the project available to third parties, including researchers, policymakers, and the general public. The data will be made available in a suitable repository, and we will ensure that the metadata and documentation are sufficient to facilitate the data's re-use. Additionally, **we will develop mechanisms to ensure the long-term preservation and accessibility of the data beyond the project's duration.**

Further to the FAIR principles, **DMPs also address research outputs other than data, and should carefully consider aspects related to the allocation of resources, data security and ethical aspects.**

3. Summary of Research Data

All data will be collected for the purpose of increasing knowledge neurodevelopmental pathways leading to absence epilepsy and Parkinson's Disease by the use of GEMs (WP2). We will collect two major types of data. Firstly, we will use chemogenetic and pharmacological techniques to collect EEG data and brain imaging data from Drd1a-Cre mice and GAERS rats. These data will provide us with understanding of the role of layer 6 cortical neurons in absence epilepsy pathophysiology. Secondly, we will generate a double transgenic model by Cre-loxP transgenesis and validate specific gene (SNCA) deletion.

Relation to Objectives

The GEMSTONE WP2 is focused on two major objectives.

O2.1. Examination of neurodevelopment and chemogenetic modulation of cortical layer 6 in absence epilepsy

To explore the time domain of neurodevelopmental changes in neuropeptide receptors expression of layer 6 neurons and pharmacologic effect of neuropeptide ligands on absence seizure generation in genetic absence epilepsy rats from Strasbourg (GAERS) rats

EEG data that we collect from GAERS performing pharmacological manipulations of layer 6 cells in GAERS will enable us to understand the effect of neuropeptide ligands (agonist and antagonist) on spontaneous absence seizures

[4] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/aga_en.pdf

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in GAERS. We will also collect imaging data during the different neurodevelopmental stages (at P0, P7, P21 and adults) to characterize the neuropeptide receptor expression on coronal brain sections derived from GAERS and control rats in cortical layer 6 and projecting thalamic nuclei by immunohistochemical (IHC) staining methods.

To address the second part of this objective we will modulate cortical layer 6 activity with chemogenetic methods by using Designer Receptors Exclusively Activated by Designer Drugs (DREADDs) in Drd1a-Cre mice a selective line that targets Cre-expression to only a subpopulation of layer 6 neurons. **We will collect here EEG data and electrophysiology data, multielectrode array and imaging data.**

O 2.2. Investigation of the time course and distribution of α-syn expression in different brain regions in the conditional SNCA transgenic mouse model, examining α-synuclein pathophysiology of Parkinson's disease.

GEMSTONE will produce a double transgenic model for spatial and temporal control of gene expression. Nestin-driver line will be used for cre expression. Mutant lines will be generated by Cre-loxP transgenesis using "floxed" SNCA mice. In order to identify neuronal populations that accumulate α-synuclein, multichannel immunofluorescence experiments will be performed. **Brain tissues will be collected in different neurodevelopmental stages of SCNA transgenic mouse and biochemical, molecular (RNA/DNA) analysis will be performed.**

Types and Formats

1. EEG data. These data are large-scale numerical measurements consisting of time series of electrical potential amplitudes, typically recorded with millisecond time resolution at multiple spatial locations simultaneously (8 channel locations). The data are typically stored as numerical arrays in LabChart Data File (.adicht) format (which is easily converted to another format (such as Matlab* .mat format). The raw data are also readily made accessible in European Data Format (EDF) format with no loss of essential information. Data will be meaningfully organised with appropriate file headers and filenames, corresponding to date, and experimental condition and animal ID.
2. Imaging data. Immunohistochemistry (IHC) experiments will be performed in order to validate protein (neuropeptide) or viral (DREADD) expression. Immunofluorescence IHC images will be obtained on coronal brain sections derived from GAERS rats and Drd-1a-Cre mice. Raw data for brain-imaging measurements are stored in standard formats (e.g. TIFF and .czi format by ZEISS ZEN Microscopy Software) and then processed using specialised software packages. Intermediate processing stages involve the use of widely used tools (e.g. Excel) and specialist software (e.g. Image J) for which there are open source tools to ensure that data files can be read without proprietary software. Data will be meaningfully organised with appropriate file headers and filenames, corresponding to date, experimental condition and animal ID.

Existing Data Re-Use

GEMSTONE's research questions and scientific approach is novel and aim to generate new knowledge. Accordingly, the scope for the re-use of existing data is minimal.

Origin of data

EEG data from GAERS rats will be collected at the Laboratory Animals Application and Research center (DEHAM) of ACU. Imaging data will be processed by the ACU research laboratories.

Expected size of data

EEG data: Estimated size of data 2TB. The file size of the imaging data from IHC slides is considerably larger. We estimate that the total will not exceed 10 TB.

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Data Utility

Electrophysiology data and imaging data from animals will be available in the publications and will be useful for neuroscience researchers investigating neurodevelopmental aspects of neurological disorders. Based on the objectives of the projects we attempt to explore novel therapeutic targets such as neuropeptide receptors which should be of interest for drug developing companies.

4. Other research outputs

There is no other research output except what we identified previously in this document.

5. Allocation of resources

The GEMSTONE project has reserved a dedicated budget for open-access scientific publications, which can be used for "green" or "gold" publications in high-impact factor journals or in EC-supported repositories that have no related cost of use. The budget for open-access publications is reserved for six publications in the project, with a total budget of €18,000. This means that the project will cover the costs associated with publishing research outputs in open-access journals or repositories. These costs may include article processing charges (APCs), page charges, and other fees related to the publication.

Such costs may include direct and indirect expenses related to storage, archiving, re-use, security, metadata creation, and quality assurance. The data storage can capable to archive all types of data excluding .exe. In general, these costs may depend on the amount and complexity of the data produced, the required standards and formats, and the duration of the preservation period. On the other hand, for publication ACU Library data storage provides these services.

Our project partners will share the responsibility and work collaboratively to ensure compliance with the grant agreement conditions and the FAIR principles. ACU is responsible to ensure the long-term preservation of research outputs by keeping them in trusted repositories that comply with open-access policies and standards. **The responsibility for deciding which data to keep and for how long may lie with the project partners, who should consider the scientific, ethical, legal, and societal value of the data needed to clarify in the second DMP.** It is also important to involve the stakeholders, such as the research communities, data users, and funding agencies such as TUBİTAK and the national open access platform Aperta[5] to ensure that the data are relevant, reliable, and accessible.

6. Data security

During the meetings, seminars and workshops of the GEMSTONE, the consortium members will acquire data in various formats, including physical records, photographs, videos, and electronic documents. To document the project, each partner will store this data independently according to their respective organizational rules and regulations for data storage and security. **Personal contact data obtained during project activities will be kept confidential within the GEMSTONE consortium. Any storage of personal data will require explicit informed consent from subjects, in accordance with the informed consent procedures outlined in the Consortium Agreement**. Each partner is responsible for ensuring that these data are stored securely and safely, fully compliant with the DMP (D1.1) for GEMSTONE and European Union data protection laws**. All personal data collected will be deleted from the project's data storage five years after the project ends.**

In addition, all GEMSTONE activities will comply with national legal and ethical requirements in the countries where

[5] https://ulakbim.tubitak.gov.tr/en

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they occur, namely Turkey, Sweden, and Italy. **The project will also adhere to Horizon Europe's ethical standards and guidelines, as well as the provisions of the General Data Protection Regulation 2016/679 for collecting and processing personal data in meetings, communication, and dissemination activities.**

7. Ethics

All work undertaken by GEMSTONE using animal models will be required to obtain ethical approval from a recognised ethical body in the host institution where the work will be conducted to be in place prior to commencing the study. No ethical issues were raised from the ethical review of the proposed project and all protocols are approved by the Ethics Committees (Protocol No: HDK-2022/82) The Ethics Committees of each institution will ensure that ethical approval for all studies meets the relevant national and international guidelines and best practice rules and standards as laid out by host country law, EU law, EU directives (legislation EU Directive 2010/63/EU), UK Animals (Scientific Procedures) Act 1986. Transgenic animals will be transferred from ULUND to ACU in accordance with the material transfer agreement (MTA) between ULUND and ACU describing the conditions for the export and the terms of utilization (Task 3.1 in WP3).

The research data collected as part of this project does not include sensitive personal information. It will be managed stored and shared by ACU and/or ULUND in full accordance with the GEMSTONE's DMP. The ethical approval was taken Acıbadem University Ethics Committee on December 10th,2022.

8. Other issues

We do not have other national/funder/sectorial/departmental procedures for data management.

Annex I – GEMSTONE workshops, scientific meetings, summer schools

Task	Event	Month	Host
Table 2.4 - Dissemination events organized by the GEMSTONE consortium	Regional Symposium on Neurodevelopmental Aspects of brain disorders& genetically engineered models	M10	To be defined
Table 2.4 - Dissemination events organized by the GEMSTONE consortium	Event during the 22nd National Neuroscience Congress organized bythe Brain Research Society annually in Turkey, titled "Implementation of chemogenetic modulation and genetically engineered animal models"	M28	To be defined
Table 2.4 - Dissemination events organized by the GEMSTONE consortium	Annual Neuroscience Day at ACU premises	M24, M36	Istanbul (Turkey)
Table 1.2.3 – Plan of internal workshops and interactive courses	GEMSTONE research workshop and interactive course with hands-on	M14	Istanbul (Turkey)

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	training on chemogenetic modulation, and DREADD validation. Speakers: D. Kırık, Å. Petersen,		
Table 1.2.3 – Plan of internal workshops and interactive courses	M. Anderson, F. Berglind (ULUND), F. Onat, Ö.Sarıyıldız, N.Çarçak Yılmaz, K.Bilgüvar (ACU)	M18	Istanbul (Turkey)
Table 1.2.3 – Plan of internal workshops and interactive courses	Workshop on understanding and developing standard operating procedures (SOPs), basic principles and best practices for digital laboratory notebook use. Speakers: F. Onat, N. Çarçak, R. Gülhan,T. Eryiğit, M. Yavuz, T. Taygun Turan, Ö. Özdemir, E.	M24	Istanbul (Turkey)

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