NeoGiANT

The power of grape extracts: antimicrobial and antioxidant properties to prevent the use of antibiotics in farmed animals: 101036768

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PROJECT INFORMATION

Project full title: The power of grape extracts: antimicrobial and antioxidant properties to prevent the use of antibiotics in farmed animals

Acronym: NeoGiANT

Call: H2020-LC-GD-2020-4

Topic: LC-GD-6-1-2020

Start date: 1st October 2021

Duration: 48 months

List of participants:

No.	Acronym	Participant organisation name	Country
1 (Coord)	USC	Universidade de Santiago de Compostela	Spain
2	MRI	Moredun Research Institute	United Kingdom
3	IBPRS	Instytut Biotechnologii Przemysłu Rolno-Spożywczego im. prof. Wacława Dąbrowskiego	Poland
4	VRI	Veterinary Research Institute	Czech Republic
5	MATE	Nemzeti Agrárkutatási és Innovációs Központ	Hungary
6	FUB	Freie Universität Berlin	Germany
7	FCUP	Universidade do Porto – Faculdade de Ciências	Portugal
8	ULL	Universidad de La Laguna	Spain
9	UNE	Asociación Española de normalización	Spain
10	JU	Jihočeská Univerzita	Czech Republic
11	CONICET	Consejo Nacional de Investigaciones Científicas y Técnicas	Argentina
12	ASAJA	Asociación Agraria de Jóvenes Agricultores	Spain
13	ATM	Anitom S.L	Belgium
14	i-GRAPE	i-GRAPE	Spain
15	CTA	Contactica S.L	Spain
16	NUS	Nutrition Science	Belgium
17	CZV	CZ VACCINES	Spain
18	LBE	LIFEBIOENCAPSULATION SL	Spain
19	BIAN	BIANOR BIOTECH	Spain
20	MAGA	MAGAPOR S.L.	Spain

DELIVERABLE DETAILS

Document Number:	D1.3.
Document Title:	Data Management Plan
Dissemination level	PU – Public
Period:	PR1
WP:	WP1
Task:	Task 1.1
Author:	UNIVERSITY OF SANTIAGO DE COMPOSTELA (USC) USC UNIVERSIDADE DE SANTIAGO DE COMPOSTELA
Abstract:	During the development of the NeoGiANT, an important amount of data will be generated, and this includes articles, reports, deliverables, datasheets from different analysis, surveys, among other. A management plan needs to be created in order to define the protocols of organization, sharing, ownership and publishing of those results. This document describes the policy adopted regarding the management of the NeoGiANT datasets.

Version	Date	Change
V1	17/03/2022	Initial version

Disclaimer

The views and opinions expressed in this document reflect only the authors' views, and not necessarily those of the European Commission.

1 INTRODUCTION

This document corresponds to the first version of Deliverable 1.3_Data Management Plan. It covers the description of how research data will be collected, processed, monitored, and catalogued during the NeoGiANT project lifetime. For each dataset, it describes the type of data and their origin, the related metadata standards, the approach to data sharing and target groups, and the approach to data archiving and preservation, taking into account the need to balance openness and protection of scientific information, commercialisation, Intellectual Property Rights (IPR), privacy concerns and security. The information is organised by Work Packages (WP) and corresponds to the Data Management Plan aspects covered in the H2020 Guidelines on FAIR Data Management in Horizon 2020 (in general terms, research data should be "FAIR", that is findable, accessible, interoperable, and re-usable). Information at this stage of the project has been gathered from Work Package Leaders (WPL). The NeoGiANT Data Management Plan will be updated periodically.

2 DATA MANAGEMENT PLANS PER WORK PACKAGE

The data collection/generation within the project will be done with the purpose of achieving NeoGiANT objectives. The thorough collection, evaluation and storage of experimental data will ensure reproducibility on the one hand, and traceability on the other hand, if experimental adjustments become necessary.

The non-confidential data sets, data that do not compromise the IPR from the partners, will be make open accessible through the Zenodo repository.

NeoGiANT project will use this repository due to its characteristics:

- **Safe** — your research is stored safely for the future in CERN's Data Centre for as long as CERN exists.
- **Trusted** — built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
- **Citeable** — every upload is assigned a Digital Object Identifier (DOI), to make them citable and trackable.
- **No waiting time** — Uploads are made available online as soon as you hit publish, and your DOI is registered within seconds.
- **Open or closed** — Share e.g. anonymized clinical trial data with only medical professionals via the restricted access mode.
- **Versioning** — Easily update your dataset with our versioning feature.
- **GitHub integration** — Easily preserve your GitHub repository in Zenodo.
- **Usage statisics** — All uploads display standards compliant usage statistics

Zenodo helps researchers receive credit by making the research results citable and through OpenAIRE integrates them into existing reporting lines to funding agencies like the European Commission. Citation information is also passed to DataCite and onto the scholarly aggregators.

2.1 WP1 Project Management

Work package	WP1. Project Management
1. **Data summary**	
1.1. Purpose of data collection/generation	Obtain contact data and information about the partners involved in the project to facilitate the exchange of information between project members and to establish project management procedures and structures to ensure an effective management.
1.2. Relation to project objectives	Directly related with all the WP1 objectives: - Assure that the management procedures are complete to design appropriate tools to facilitate the project coordination, resources monitoring, quality control, knowledge management and for the organization of project structures. - To ensure an efficient financial and legal management. - To facilitate and adequate project coordination with other related projects and the European Commission and to guarantee that gender equality issues are taken into account in the project.
1.3. Types/format of data	Personal data and contact details of the members of consortium, including the EAB and EthAB members (name, affiliation, e-mail, phone...) Text files, multimedia, .xls, .pdf, .doc...
1.4 Origin of data or reuse of existing data	Data will be provided by the project members and/or their institutions.
1.5 Scale of data	< 1Tb
1.6 Data utility	Project members and their institutions.
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	The collecting contact data will be available to all project members through a shared excel file. Each member may modify or update his or her data at any time. More information about the project management guidelines can be found in the public deliverable D1.1.
2.1.2 Identifiability of data	The use of DOIs is not considered.
2.1.3 Versioning	Yes
2.1.4 Metadata usage	Not expected to use metadata.
2.2 Making data openly accessible	
2.2.1 Accessibility	Basic contact details of the members of consortium (complete name, affiliation and e-mail) will be only available for the project partners through a shared excel file (stored in Microsoft 365 One Drive). Other public data including the composition of the project structures (WP leaders), EAB and EthAB members, will be available in public documents such as Deliverable D1.1. shared in the project website.

2.2.2 Method of availability	The data will be mainly available online. The non-confidential data sets, data that do not compromise the IPR from the partners, will be make open accessible through the Zenodo repository.
2.2.3 Methods/software needed to access the data	Web browser and basic Microsoft or similar open-source tools for documents.
2.2.4 Access control	Only project partners will have access to the personal information of the members of consortium (complete name, affiliation and e-mail) through a shared .xls file. Other public data does not include access control.
2.3 Making data interoperable	
2.3.1 Interoperability	Not applicable.
2.4 Data reuse and quality	
2.4.1 Licensing	Not applicable.
2.4.2 Data availability and embargo	WP1 data will be available straight after publication and updated.
2.4.3 Reuse restrictions	They can be reused only for communication purposes between project members.
2.4.4 Data retention	At least 5 years after the project ends.
2.4.5 Data quality	Partners will check the data prior publishing and a data quality process will be established to ensure the integrity of the NeoGiANT project.
3 Allocation of resources	
3.1 Costs	All costs for making data FAIR are integrated within the project.
3.2 Data management responsibilities	Data collectors are all project partners, mainly WP leaders. The project coordinator, USC is the partner responsible for data management.
3.3 Costs of preservation	Long term preservation of data and the costs associated with this is ensured by the project and by the partners themselves.
4 Data security	
4.1 Data security	In all cases, data will be stored in at least two locations: Microsoft 365 One Drive tool provided by the USC, and EC portal where the main contact person of each partner is listed. Informed consent statements for data sharing and long-term preservation will accompany questionnaires dealing with personal data and have been addressed in WP12. Where necessary data will be anonymised
5 Ethical aspects	
5.1 Ethical aspects	Not applicable in this WP. In any case, informed consent statements for data sharing and long-term preservation will accompany questionnaires dealing with personal data and have been addressed in WP12. Where necessary data will be anonymised. The project is fully compliant with the GDPR regulations laid out in Regulation (EU)

	2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (20) and respects regulations on intellectual property rights.
6 Other aspects	
6.1 Other aspects	Not applicable

2.2 WP2. Grape extract production & natural formulations with antimicrobial properties

Work package	**WP2. Grape extract production & natural formulations with antimicrobial properties**
2. **Data summary**	
1.1.Purpose of data collection/generation	Data will be collected to fully keep track of the different extract batches, liquid and solid formulations, and prototypes. Data related to the physicochemical and stability characterization of the extracts and different prototypes will also be collected.
1.2. Relation to project objectives	The data collection is required to ensure that the developed extracts and prototypes fulfil the standards stablished in terms of physicochemical properties and antibacterial and antioxidant activities. Data recording of the different batches is crucial for their traceability to further experiments.
1.3. Types/format of data	Experimental values related to extract and prototypes properties as total polyphenolic index, antioxidant activity, pH, individual polyphenols concentration, scientific publications, reports… Mainly on PDF, excel files or other files on Microsoft Office applications
1.4 Origin of data or reuse of existing data	The data will be collected by the researchers on the lab daily basis work
1.5 Scale of data	A report will be generated for each batch of extract and prototypes. Also, information regarding failed prototypes or experiments will be recorded in case is needed for further experiments (<1Tb)
1.6 Data utility	The data will be useful for all NeoGiANT partners to give them information of the developed extracts and prototypes. Data will also be useful for other EU and national projects focused on new alternatives to vet formulations and treatments.
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	As mentioned before, a report will be generated for each extract batch and prototype that will be identified by a unique code. With this approach all the associated information from the same batch can be found by searching this code.

2.1.2 Identifiability of data	Initially, the use of DOIs is not considered, as the developed prototypes could be first object of intellectual protection. Initially, it is expected that data will only be shared between NeoGiANT partners. If not, data will be freely available online and maybe Digital Object Identifiers can be use, for the publications derived from the obtained results.
2.1.3 Versioning	Versioning is not expected.
2.1.4 Metadata usage	Metadata standards are not expected to be used.
2.2 Making data openly accessible	
2.2.1 Accessibility	All the data will be openly available after intellectual protection if required.
2.2.2 Method of availability	For the data before intellectual protection, the NeoGiANT website intranet will be used. Afterwards, relevant data will be published in peer-review open access journals. Full data will be available on the NeoGiANT website.
2.2.3 Methods/software needed to access the data	No specific methods will be required to access the data.
2.2.4 Access control	For the data before intellectual protection the NeoGiANT website intranet will be used. In this case all the NeoGiANT partners will have access to the data, but they will need to log in the intranet with their credentials to have complete access of the data. In this way, we will keep track of the members accessing the data.
2.3 Making data interoperable	
2.3.1 Interoperability	Data will be collected on a batch-traceability basis preparing a report for all the batches of the extracts and prototypes. All the reports will have the same format so as to ensure operability.
2.4 Data reuse and quality	
2.4.1 Licensing	In case the partners decide the intellectual property protection of either the extraction procedure, the prototypes, or both a patent will be filled. In this event, if a company is interested on the developed knowledge and requires the licencing of the data, this would be considered by the partners. The default licences is CC-BY-4.0 (for data and publications).
2.4.2 Data availability and embargo	Data will be available for reuse after patent application, if required, and publication. An embargo can be considered if the data is licensed.
2.4.3 Reuse restrictions	All the data will be reusable after patent application, if required, and published.

2.4.4 Data retention	Data will be retained only the enough time required for intellectual protection. Other data will be retained at least 5 years after the project ends.
2.4.5 Data quality	All the developed reports will have the same information and include both the descriptive and raw data to ensure the integrity of the NeoGiANT project.
3 Allocation of resources	
3.1 Costs	All costs for making data FAIR are integrated within the project.
3.2 Data management responsibilities	The data management responsibilities will be relegated to each task leader. The leader will be in charge of the data generated on the task and make it available through the above-mentioned procedures to the rest of the partners and publicly once protected.
3.3 Costs of preservation	The data preservation will be done on the NeoGiANT website using the standard procedures with no extra cost associated.
4 Data security	
4.1 Data security	Standard protection measures shall be taken to ensure the data available on the NeoGiANT intranet is secured.
5 Ethical aspects	
5.1 Ethical aspects	There are no ethical aspects that need consideration in this WP.
6 Other aspects	
6.1 Other aspects	Not applicable.

2.3 WP3. Assessment of the antimicrobial activity in-vitro

Work package	**WP3. Assessment of the antimicrobial activity in-vitro**
3. **Data summary**	
1.1. Purpose of data collection/generation	To provide information about the *in vitro* antimicrobial activity of several grape marc polyphenolic extracts (*E. vitis)* and the formulations based on these extracts against several reference strains that are relevant for human and animal health, as well as isolates of clinical interest. With this information, WP3 will produce a database on the effectiveness of the extracts. Possible appearing of resistances to the polyphenolic extracts will also be investigated.
1.2. Relation to project objectives	O3.1. To prove the *in vitro* antimicrobial activity of the polyphenolic extract on the microbial species to study. O3.2. To prove the *in vitro* antimicrobial activity of the formulations on the microbial species to study. O3.3. To evaluate the resistance of the pathogenic strains investigated against the polyphenolic extract *in vitro* O3.4. To establish database regarding the effectiveness of the extract against bacteria.
1.3. Types/format of data	The effectiveness of the extracts and formulations will be stated by means of the Inhibitory Concentration 50 (IC_{50}) and the Minimum inhibitory concentration (MIC).

	The optimized protocols, antimicrobial effectiveness data and databases will be provided in Microsoft Office formats (.xls, .doc). Publications in PDF.
1.4 Origin of data or reuse of existing data	Antimicrobial tests subject of this project and previous publications.
1.5 Scale of data	Approximately 400 values of IC_{50} and MIC, taking into account the number of microbial species to study and the different extracts and formulations. WP3 will produce a monthly report with the results.
1.6 Data utility	The IC_{50} and MIC of the extracts will be useful to WP2 to calculate the concentration needed for the formulations against different pathogens. The data on the effectiveness of the formulations will be useful to the pharmaceutics industry, veterinary clinicians, and regulatory authorities. In general, all data produced will be of academic and clinic interest.
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	Antibacterial, Anti-parasitic, Grape-marc, Natural extract, Polyphenols, Enhancement of wine-making byproducts.
2.1.2 Identifiability of data	Data will be published making available under the reference mechanism as DOI.
2.1.3 Versioning	It is expected. Protocols and results obtained will be systematically updated.
2.1.4 Metadata usage	Not expected.
2.2 Making data openly accessible	
2.2.1 Accessibility	Protocols and results will be made openly available by publication in international open journals during the project.
2.2.2 Method of availability	Mainly online and they will be available in repositories as ZENODO
2.2.3 Methods/software needed to access the data	The default license is CC-BY-4.0 (for data and publications).
2.2.4 Access control	The project partners will have access to the data through the website intranet, login with their credentials to have complete access of the data.
2.3 Making data interoperable	
2.3.1 Interoperability	All the reports will have the same format described in the Management Data Plan so as to ensure operability.
2.4 Data reuse and quality	

2.4.1 Licensing	Data will be licensed using standard licenses (i.e., Creative Commons licenses)
2.4.2 Data availability and embargo	It is expected that most data will be published in Open Access journals. Data will not be made public if they are necessary for filing a patent.
2.4.3 Reuse restrictions	Unless they are under patent procedure, they can be reused.
2.4.4 Data retention	For at least 5 years after finalizing the project.
2.4.5 Data quality	The general rules set by the consortium and the participating institutions of WP3 will apply.
3 Allocation of resources	
3.1 Costs	All costs for making data FAIR are integrated within the project.
3.2 Data management responsibilities	The data management responsibilities will be assumed by each task leader. The WP leader will be in charge of the data generated on the task.
3.3 Costs of preservation	They are considered in the budget project.
4 Data security	
4.1 Data security	Data will be stored in Microsoft 365 One Drive tool provided by the USC. Periodically backups are performed and stored on an external disk.
5 Ethical aspects	
5.1 Ethical aspects	Not appliable in WP3.
6 Other aspects	
6.1 Other aspects	Not applicable.

2.4 WP4. Assessment of the antimicrobial formulation for feeding at small scale

Work package	**WP4. Assessment of the antimicrobial formulation for feeding at small scale**
4. **Data summary**	
1.1. Purpose of data collection/generation	To perform statistical analysis to identify effects in animal health and performance that can be attributed to the use of the specific new feed formulations.
1.2. Relation to project objectives	O 4.1: To collect parameters that are linked to feed quality in order to identify the best feed formulation intended for further use in the different animal trials. O 4.2: By means of well documented and scientifically established protocols, the *in vivo* trials will generate data that will allow statistical analysis in order to determine the antioxidant and antimicrobial activities of the selected feed formulations. O 4.3: Through field trials where natural infection pressure is present and also by controlled infection trials in cattle, pigs, poultry and fish, a

	species specific approach is taken to best quantify the effects of the formulated feeds on animal health. O 4.4: To collect parameters that are linked to feed quality in order to evaluate the effects of large scale production systems on product quality. O 4.5: Depending on the animal species, field experiments are performed (pigs and poultry) or best simulated in experimental setting (cattle and fish). For each animal species a specific set of parameters is being collected depending on the production system, these parameters cover both animal performance and health.
1.3. Types/format of data	Both numerical, continuous and categorical data will be collected Data will be stored in the best format suitable for the type of data. Primary datasets will be made in Excel format, original data is also stored in the original format (e.g. in case of certain animal trials original data is collected on paper, these originals are also stored even if the data is transferred to excel/database for further analysis).
1.4 Origin of data or reuse of existing data	Clinical trials, diagnostic results, biobanks, manuscripts, analytical results (non-exclusive list).
1.5 Scale of data	4 GB
1.6 Data utility	Academia, veterinary clinicians, pharmaceutical industry, regulatory authorities, all taking into account the agreements with respect to confidentiality and conflict of interest as described in the NeoGiANT project agreement.
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	Keywords: *E. vitis* extract, antioxidant, novel antimicrobials, animal health and performance, feed additives, fish, poultry, cattle, swine, field and experimental conditions.
2.1.2 Identifiability of data	Data will be published under the reference mechanism as DOI.
2.1.3 Versioning	Data used in NeoGiANT (WP4), including protocols and database will be revised/updated continuously and at varying rates. Updating the changes in a new version are classified using the letter 'v' followed by the number of the version, following standard procedures within the NeoGiANT project.
2.1.4 Metadata usage	Data created within WP4 will be organized to allow metadata approach during statistical analysis, where available also external meta datasets will be used to benchmark with field conditions. Best practice for file naming conventions and research products will be used.
2.2 Making data openly accessible	
2.2.1 Accessibility	Protocols and results will be made openly available by publication in international open journals written in timely manner during the

	project. Upon pre-print manuscript publication, all raw data and associated code will be made publicly available.
2.2.2 Method of availability	All publications will be made available on the NeoGiANT-website. Other potential sources are Web of Science, Google Scholar, Pubmed (non-exclusive list).
2.2.3 Methods/software needed to access the data	The methods/software that are needed to access the documentation is described at the NeoGiANT website, or at the website of the involved journal.
2.2.4 Access control	Data linked to scientific publications is available through the website of the specific journal. Extra information regarding to non-published data needs to be requested via email to the data owner and may or may not be granted depending on the NeoGiANT consortium agreements.
2.3 Making data interoperable	
2.3.1 Interoperability	Data using vocabularies will follow FAIR principles so that the data can be understood and used correctly by data consumers and members of the NeoGiANT Consortium. Standard vocabulary will be used when available.
2.4 Data reuse and quality	
2.4.1 Licensing	Not applicable
2.4.2 Data availability and embargo	For approach to dissemination of data in line with FAIR principles, archiving, DOIs, storage and data security including cyber-security, data will be stored, described and will be assigned a DOI on relevant repository.
2.4.3 Reuse restrictions	Reuse restrictions, if any, will be depending on the NeoGiANT consortium agreements.
2.4.4 Data retention	Data will be retained for a minimum of ten years.
2.4.5 Data quality	Data quality will be guaranteed by each WP4-task leader and data-quality and data-integrity are a major point of attention in each WP4 task. The WP4 leader will verify that all partners involved in WP4-tasks maintain a high standard to ensure the best data-quality according to VICH-GCP standards.
3 Allocation of resources	
3.1 Costs	The NeoGiANT project will take advantage of several free software and services that will be used to make the data of the project open and FAIR.
3.2 Data management responsibilities	Tasks involving data management are present in all stages of the project. NeoGiANT will lead the first substantive data management tasks that begin in WP1.
3.3 Costs of preservation	Some expected costs associated with the NeoGiANT project, mainly in the form of staff hours. Researchers and data managers will need to dedicate time in managing and developing and its various tools. In

	addition, there will be legal costs associated with maintaining legal compliance in reusing datasets for the project.
4 Data security	
4.1 Data security	All data collected during WP4 activities is digitalised and is stored in secured cloud-based servers and is only accessible for those who are involved in WP4 and associated tasks.
5 Ethical aspects	
5.1 Ethical aspects	The NeoGiANT project is fully compliant with the General Data Protection Regulation (GDPR) regulations laid out in Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (20) and respects regulations on intellectual property rights.
6 Other aspects	
6.1 Other aspects	Not applicable

2.5 WP5. Assessment of the antimicrobial formulation for animal diseases treatment products

Work package	**WP5. Assessment of the antimicrobial formulation for animal diseases treatment products**
5. **Data summary**	
1.1. Purpose of data collection/generation	The main purpose of data collection is to gather information of the antimicrobial activity of extract formulations from *E. vitis* against relevant infectious diseases in cattle, pigs and fish.
1.2. Relation to project objectives	To analyse the therapeutic potential of developed formulations on "in-vivo" models of relevant infectious diseases in cattle, pigs and fish; To validate the extract as disease treatment; To prove the benefits of these innovation products by validation in "in-vivo" experiments.
1.3. Types/format of data	Protocols, optimized procedures, histological descriptions, catalogues of samples, tables of tests, results, graphics of frequency and distribution, protocols, publications. Word (protocols, optimized procedures, histological descriptions), Excel, (catalogues of samples, tables of tests, results, graphics of frequency and distribution), PDF (final results and protocols, publications).
1.4 Origin of data or reuse of existing data	Test performance data, diagnostic protocols, biobanks, manuscripts.
1.5 Scale of data	500 MB
1.6 Data utility	Academic, veterinary clinicians, pharmaceutics industry, regulatory authorities; veterinary science institutions.

2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	*E. vitis* extract; bovine mastitis; intramammary infection novel antimicrobials; antibacterial, animal health; fish pathogens; exudative epidermitis.
2.1.2 Identifiability of data	Data will be published making available under the reference mechanism as DOI.
2.1.3 Versioning	The data used in NeoGiANT (WP5), including protocols and database will be revised/updated constantly and at varying rates, and clear data versioning is vital in communicating the changes in the data. Updating the changes in a new version classified using the letter "v" followed the number of the version.
2.1.4 Metadata usage	A minimum set of metadata fields will be used based on the best-practice for the domain, and best practice for file naming conventions and research products.
2.2 Making data openly accessible	
2.2.1 Accessibility	Protocols and results will be made openly available by publication in international open journals written in a timely manner during the project. Upon pre-print manuscript publication, all raw data and associated code will be made publicly available.
2.2.2 Method of availability	Datasets; results, published articles generated during the project will be available in the repository like Zenodo (GitLab).
2.2.3 Methods/software needed to access the data	The default license is CC-BY-4.0 (for data and publications), unless there is compelling reason to license the output differently (e.g., external requirement).
2.2.4 Access control	Not applicable.
2.3 Making data interoperable	
2.3.1 Interoperability	Data will use vocabularies will follow FAIR principles so that the data can be understood and used correctly by data consumers and members of the NeoGiANT Consortium. Standard vocabulary will be used when available.
2.4 Data reuse and quality	
2.4.1 Licensing	Data will be licensed using standard licenses (i.e., Creative Commons licenses) in line with the obligations set out in the Grant Agreement.
2.4.2 Data availability and embargo	For approach to dissemination of data in line with FAIR principles (Findable, Accessible, Interoperable and Reusable), archiving, DOIs, and storage, and for data security, including cyber-security, data will be stored, described, and will be assigned a DOI on relevant repository.

2.4.3 Reuse restrictions	All published protocols and results in international Open-access journals (under the Copyright terms of the Creative Commons Attribution 4.0 International license), will be reusable.
2.4.4 Data retention	At least 5 years after the project ends.
2.4.5 Data quality	A data quality process will be established in order to ensure the integrity of the NeoGiANT project.
3 Allocation of resources	
3.1 Costs	The NeoGiANT project will take advantage of several free software and services that will be used to make the data of the project open and FAIR. Zenodo; GitLab will be used as the data identifier for the project, and for data repository.
3.2 Data management responsibilities	Tasks involving data management are present in all stages of the project. NeoGiANT will lead the first substantive data management tasks that begin in WP1.
3.3 Costs of preservation	Some expected costs associated with the NeoGiANT project, mainly in the form of staff hours. Researchers and data managers will need to dedicate time in managing and developing and its various tools. In addition, there will be legal costs associated with maintaining legal compliance in reusing datasets for the project.
4 Data security	
4.1 Data security	Robust backup procedures are in place for data recoverability. Nightly backups are performed and stored on disk at the local site, which is then copied to our other site, providing two copies, one of which is offsite. A weekly copy of data is also written to tape and stored in a fireproof safe providing a third offline copy. Data stored in the Microsoft 365 cloud environment is backed up nightly to on-site disk storage and a copy of this data is transferred to backup tape media in our secondary site. A 30-day retention policy is applied to data in Microsoft 365 allowing any deleted data to be restored directly in the cloud environment within the 30-day period (thereafter it can be restored from backups). There are several layers of redundancy implemented across the network, including dual internet connectivity points, which aims to ensure continuity of services. The Moredun Research Institute (MRI) is currently implementing Cyber Essentials certification, which will be renewed annually.
5 Ethical aspects	
5.1 Ethical aspects	Not applicable.
6 Other aspects	
6.1 Other aspects	Not applicable.

2.6 WP6. Assessment of the antimicrobial formulation for sperm preservation

Work package	**WP6. Assessment of the antimicrobial formulation for sperm preservation**
6. **Data summary**	
1.1. Purpose of data collection/generation	To evaluate the antimicrobial extracts in extended semen and evaluate their beneficial effects.
1.2. Relation to project objectives	All collected data are directly related with the project objectives: - To validate the antimicrobial extracts in extended semen. - To validate the antimicrobial extract in cooled and cryopreserved storage of spermatozoa. - To evaluate physiological effects of the extracts on spermatozoa for potential beneficial effects.
1.3. Types/format of data	Extenders stability, Physicochemical characteristics, sperm viability, metabolism... Text files, .pdf, .pptx, .odf, .xls, .doc.
1.4 Origin of data or reuse of existing data	Data will be provided by the analytical instrumentation employing to perform the experiments.
1.5 Scale of data	<1Tb
1.6 Data utility	Researchers, veterinaries, farmers...
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	Sperm analysis, extenders, antimicrobial extracts...
2.1.2 Identifiability of data	Data may be published in scientific articles under DOI.
2.1.3 Versioning	Yes
2.1.4 Metadata usage	No metadata standards will be used for WP6 data
2.2 Making data openly accessible	
2.2.1 Accessibility	It is expected that protocols and most results will be made openly available by publication in international open journals during the project.
2.2.2 Method of availability	Mainly online
2.2.3 Methods/software needed to access the data	Web browser for web content, open-source tools for documents.
2.2.4 Access control	Data linked to scientific publications is available through the website of the specific journal. Other non-published information needs to be

	requested via email to the data owner and may or may not be granted depending on the NeoGiANT consortium agreements.
2.3 Making data interoperable	
2.3.1 Interoperability	Data will follow FAIR principles.
2.4 Data reuse and quality	
2.4.1 Licensing	Data will be licensed using standard licenses (i.e., Creative Commons licenses) in line with the obligations set out in the Grant Agreement.
2.4.2 Data availability and embargo	In line with FAIR principles (Findable, Accessible, Interoperable and Reusable), archiving, DOIs, and storage, and for data security, including cyber-security, data will be stored, described, and will be assigned on relevant repository such as ZENODO. Data that do not infringe patent interests will be available in public databases.
2.4.3 Reuse restrictions	Permissions are provided through licenses.
2.4.4 Data retention	At least 5 years after the project ends.
2.4.5 Data quality	Consortium members will be entitled to access the data.
3 Allocation of resources	
3.1 Costs	All costs for making data FAIR are integrated within the project.
3.2 Data management responsibilities	The data management responsibilities will be assumed by each task leader and WP leader.
3.3 Costs of preservation	Not applicable.
4 Data security	
4.1 Data security	Consortium members will be entitled to access the data. Their access will be password protected.
5 Ethical aspects	
5.1 Ethical aspects	The project is fully compliant with the GDPR regulations laid out in Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (20) and respects regulations on intellectual property rights.
6 Other aspects	
6.1 Other aspects	*Not applicable*

2.7 WP7. Effects on the gastrointestinal track and the immune system

Work package	**WP7. Effects on the gastrointestinal track and the immune system**
7. **Data summary**	
1.1. Purpose of data collection/generation	The aim of the data collection is to gain knowledge about the effect of the extract on the gut microbiota and immune system in both healthy and diseased animals.
1.2. Relation to project objectives	All the collecetd data will be directly related with the WP7 objectives: O7.1 To demonstrate the effects extracts on the gut microbiota of the target animals used for *in vivo* tests. O7.2 To determine whether the application of the polyphenolic extracts can result in the overgrowth and/or shedding of zoonotic agents. O7.3 To establish database regarding the composition of gut microbiota. O7.4 To provide measurable scientific evidence of the beneficial effects of the products developed. O7.5 To assess the impact of microbiome changes on the animals' immune system. Evaluation of quantitative and qualitative parameters of the immune system will enable the assessment of health status and resistance to infectious diseases of animals without the need to infect animals In this respect, collection of data will be performed in all objectives, in accordance to the workplan.
1.3. Types/format of data	The following data types are collected: Sequence data to determine the composition of the gut microbiota Data generated from sequencing data using bioinformatics tools Data generated from bioinformatic bioinformatics data A comprehensive database will be developed as a summary of all these. The data obtained from bioinformatics processing will be used in the format defined by the programme. The processed bioinformatics data will be available in excel format after detailed processing.
1.4 Origin of data or reuse of existing data	The data are generated from experiments specified in WP7. For control and comparative analysis, data from public databases and publications will also be used.
1.5 Scale of data	The sequencing process generates around 15 million data. Additional data is expected to be processed, but the estimation of this data will only be more accurate once the results of the experiments are known.
1.6 Data utility	The data are useful primarily for the members of the consortium. These processed data will be made public under the confidentiality obligation imposed by the consortium, so that they will also be useful to the scientific community. Moreover Academic Institutions and Universities.

2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	The data will be published in publications and public databases. References to these, keywords will be included in the publications.
2.1.2 Identifiability of data	The results will be published in scientific publications, which will have a DOI identifier.
2.1.3 Versioning	We expect to use versioning.
2.1.4 Metadata usage	We will use the metadata standards used by the software vendors for sequencing and processing.
2.2 Making data openly accessible	
2.2.1 Accessibility	The use of the data depends on the decision of the consortium. If the data are necessary for filing a patent, they will not be made public until the patent is filed. Once the patent is filed, they may become public. Data appearing in scientific publications are public.
2.2.2 Method of availability	Data that do not infringe patent interests will be available in public databases (e.g. DNA sequences). Furthermore, scientific publications will also contain non-sensitive data. It will be available in the repository of MATE also (non-sensitive data).
2.2.3 Methods/software needed to access the data	No special software is needed to access the data, as they are stored in public databases. Their use requires only general professional skills.
2.2.4 Access control	Consortium members will be entitled to access the data. Their access will be password protected.
2.3 Making data interoperable	
2.3.1 Interoperability	The data are recorded in the commonly used format, in a form that can be used for other programs (e.g. correlation analysis) as well.
2.4 Data reuse and quality	
2.4.1 Licensing	Open-access will be used, other licence do not plan to get.
2.4.2 Data availability and embargo	The data required to file the patent will not be made public until the patent is filed. Once the patent has been filed, the data may be made public. Using FAIR principles as well.
2.4.3 Reuse restrictions	Only the general rules on professional, business and scientific use will apply to the re-use of the data. For example, in the case of scientific publications, a reference must be made to the article reporting the results.
2.4.4 Data retention	The data will be retained for at least 5 years after finalizing the project.
2.4.5 Data quality	The general rules set by the consortium and the participating institutions of WP7 will apply.
3 Allocation of resources	

3.1 Costs	The cost of making the data FAIR will be covered by the flat rate in the budget of the application. Moreover, several softwares are free used in that project. The most significant item is the publication of papers in open access format, at an estimated cost of €12,000. The cost of making the data FAIR will be covered by the flat rate in the budget of the application. NEOGIANT will lead the first substantive database according to the WP1 management.
3.2 Data management responsibilities	The data management responsibilities will be assumed by each task leader and WP leader.
3.3 Costs of preservation	The cost of data storage is the purchase of a separate server to store the large amount of data. The cost of purchasing a server is approximately 2300 Euro. The server does not require any major expenditure to operate.
4 Data security	
4.1 Data security	The data will be stored on a separate server, which will be accessible only after identification and will be part of the institution's general security system. The security of the institution's computer and network systems will be managed by a separate unit within the institution. Once access has been granted, the data will be transmitted to the authorised users via the network.
5 Ethical aspects	
5.1 Ethical aspects	There are no ethical considerations. Data is handled in accordance with the institution's data protection policy.
6 Other aspects	
6.1 Other aspects	Data is processed in accordance with the institution's data protection policy, which complies with EU and national rules.

2.8 WP8. Eco-design and pre-commercial validation at pre-industrial scale

Work package	**WP8. Ecodesign and pre-commercial validation at pre-industrial scale**
8. **Data summary**	
1.1. Purpose of data collection/generation	Analysis and optimization of production process and up-scaling in terms of technical requirements, environmental and social impacts, economics and validation tests results. Also, demonstrators for feed production systems
1.2. Relation to project objectives	Data collected will be used to perform Life Cycle Sustainability Assessment and eco-design of the up-scaled process, contributing to objectives O3, O7, O9, O10 by providing environmental, economic and social KPIs

1.3. Types/format of data	Technical data on production processes, experiments, product quality data, environmental impact results, economic evaluation results, social impacts results, validation tests Excel files, word files, pdf…
1.4 Origin of data or reuse of existing data	Most of data will come from the project (experiments, analysis and impact assessments). Secondary data will be used from LCA databases included in Simapro software. Data from OECD will be used for social impact assessment (job creation potential).
1.5 Scale of data	500 Mb
1.6 Data utility	Project partners and similar stakeholders
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	Same keywords used in the project and sustainability related key words will be used
2.1.2 Identifiability of data	No
2.1.3 Versioning	No
2.1.4 Metadata usage	None
2.2 Making data openly accessible	
2.2.1 Accessibility	Data included in public deliverables
2.2.2 Method of availability	Public deliverables submitted to the CORDIS portal, project website
2.2.3 Methods/software needed to access the data	PDF reader
2.2.4 Access control	Public
2.3 Making data interoperable	
2.3.1 Interoperability	Not applicable
2.4 Data reuse and quality	
2.4.1 Licensing	No
2.4.2 Data availability and embargo	Only public data
2.4.3 Reuse restrictions	None
2.4.4 Data retention	At least 5 years after the project ends.
2.4.5 Data quality	Partners will check the date prior publishing the deliverables
3 Allocation of resources	
3.1 Costs	All costs for making data FAIR are integrated within the project.
3.2 Data management responsibilities	Data collectors are all project partners collecting data for project research activities. Partner USC is the partner responsible for data management.

3.3 Costs of preservation	Long term preservation of data and the costs associated with this is ensured by the project and by the partners themselves.
4 Data security	
4.1 Data security	In all cases, data will be stored in at least two locations (i.e., EC portal and NEOGIANT webpage) to provide for data backup, recovery and secure storage/archiving. Research data of limited use will be kept on secure, managed storage for a limited time.
5 Ethical aspects	
5.1 Ethical aspects	Not applicable
6 Other aspects	
6.1 Other aspects	Not applicable

2.9 WP9. Market, Exploitation & Legal requirements

Work package	**WP9. Market, Exploitation & Legal requirements**
9. **Data summary**	
1.1. Purpose of data collection/generation	To elaborate a complete business plan with an appropriate business model and to elaborate the exploitation plan for the obtained products.
1.2. Relation to project objectives	Data will be directly related with objectives O9.1, O9.2 and O9.3.
1.3. Types/format of data	Technical data on production processes, experiments, product quality data, environmental impact results, economic evaluation results, social impacts results, validation tests, market analysis, analysis of competitors... Excel files, word files, pdf…
1.4 Origin of data or reuse of existing data	Most of data will come from the obtained products (experiments, analysis and impact assessments).
1.5 Scale of data	500 Mb
1.6 Data utility	Project partners, market competitors, general public.
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	*E. vitis* extract; quality standards, product exploitation...
2.1.2 Identifiability of data	Not expected
2.1.3 Versioning	Not expected
2.1.4 Metadata usage	Not expected
2.2 Making data openly accessible	
2.2.1 Accessibility	Data included in public deliverables. Measures to protect NeoGiANT products will be established (patents, secret know-how)

2.2.2 Method of availability	Public deliverables submitted to the CORDIS portal, project website
2.2.3 Methods/software needed to access the data	Basic Microsoft (or similar) tool to open documents, PDF reader
2.2.4 Access control	Public
2.3 Making data interoperable	
2.3.1 Interoperability	Not applicable
2.4 Data reuse and quality	
2.4.1 Licensing	No
2.4.2 Data availability and embargo	Only public data
2.4.3 Reuse restrictions	None
2.4.4 Data retention	At least 5 years after the project ends.
2.4.5 Data quality	Partners will check the date prior publishing the deliverables
3 Allocation of resources	
3.1 Costs	All costs for making data FAIR are integrated within the project.
3.2 Data management responsibilities	Data collectors are all project partners collecting data for project research activities.
3.3 Costs of preservation	Long term preservation of data and the costs associated with this is ensured by the project and by the partners themselves.
4 Data security	
4.1 Data security	In all cases, data will be stored in at least two locations (i.e., EC portal and NEOGIANT webpage) to provide for data backup, recovery and secure storage/archiving. Research data of limited use will be kept on secure, managed storage for a limited time.
5 Ethical aspects	
5.1 Ethical aspects	Not applicable
6 Other aspects	
6.1 Other aspects	Not applicable

2.10 WP10. Cooperating with European Commission Services

Work package	**WP10. Cooperating with European Commission Services**
1. **Data summary**	
1.1. Purpose of data collection/generation	To facilitate the communication between partners and other H2020 projects. To share information, raise public and scientific awareness about the outcomes of the project and the developments achieved. To

	prepare educational information presenting these results to be shared with EU platforms, national and regional governments.
1.2. Relation to project objectives	To promote project outcomes as well as receive feedback from interested stakeholders and to prepare clustering activities with other projects in the field of bioactive extraction, natural alternatives to antibiotic in farming or fight against AMR to enforce a rapid exploitation of the NeoGiANT project.
1.3. Types/format of data	Project brochure, webpage, press release, social media. Text files, multimedia, .pdf, .pptx, .odf, .xls, .mp3, .mp4
1.4 Origin of data or reuse of existing data	Data from the project proposal and data generated within the project.
1.5 Scale of data	<1Tb
1.6 Data utility	Other EU projects, governments, EU and international platforms, EIP-AGRI, farmers, public in general.
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	All the data will be openly available.
2.1.2 Identifiability of data	Not likely
2.1.3 Versioning	Yes
2.1.4 Metadata usage	Not metadata is expected.
2.2 Making data openly accessible	
2.2.1 Accessibility	All outputs (excluding confidential data) will be made openly available through the website.
2.2.2 Method of availability	Mainly online (webpage, press release, social media...) but also printed (project brochure).
2.2.3 Methods/software needed to access the data	Web browser for web content, open-source tools for documents.
2.2.4 Access control	Not applicable.
2.3 Making data interoperable	
2.3.1 Interoperability	Not applicable.
2.4 Data reuse and quality	
2.4.1 Licensing	Online data will be licensed using standard licenses (i.e., Creative Commons licenses) in line with the obligations set out in the Grant Agreement.
2.4.2 Data availability and embargo	Data will be available immediately after production (webpage, press release, social media, project brochure).

2.4.3 Reuse restrictions	Permissions will be provided through licenses.
2.4.4 Data retention	At least 5 years after the project ends.
2.4.5 Data quality	All WP leaders will be periodically informed about the data derived from WP10, and a quality process will be established to ensure the integrity of the NeoGiANT project.
3 Allocation of resources	
3.1 Costs	All costs for making data FAIR are integrated within the project.
3.2 Data management responsibilities	Data collectors are all project partners collecting data for cooperate with EU platforms or proposing activities with other EU projects.
3.3 Costs of preservation	They are considered in the project.
4 Data security	
4.1 Data security	Data will be stored in at least two locations (i.e., Microsoft 365 OneDrive and NEOGIANT webpage) to provide for data backup, recovery, and secure storage/archiving.
5 Ethical aspects	
5.1 Ethical aspects	Not applicable in this WP. NeoGiANT is fully aligned with Responsible Research Innovation (RRI) concept, as it involves industry, academic and social aspects taken into account in the full project.
6 Other aspects	
6.1 Other aspects	Not applicable.

2.11 WP11. Communication and dissemination

Work package	WP11. Communication and dissemination
1. **Data summary**	
1.1. Purpose of data collection/generation	To share information. To raise public and scientific awareness about the outcomes of the project and the developments achieved and to maximise the impact of the project's results through appropriate exploitation strategies.
1.2. Relation to project objectives	To ensure that the project's objectives are widely promoted to the target groups defined on a European level and beyond through an appropriate communication strategy.
1.3. Types/format of data	The project website, press releases, brochures, business models, exploitation plan, posters, presentations. text files, multimedia, .pdf, .pptx, .odf, .xls, .mp3, .mp4
1.4 Origin of data or reuse of existing data	Data is provided by project members and generated within the project
1.5 Scale of data	< 1Tb

1.6 Data utility	Public in general, researchers, research communities, decision-makers, industry.
2. FAIR Data	
2.1. Making data findable, including provision for metadata	
2.1.1 Facilitating findability	Search keywords will be provided to search for and successfully find WP11 outputs
2.1.2 Identifiability of data	Not likely
2.1.3 Versioning	Yes
2.1.4 Metadata usage	No metadata standards will be used for WP11 data
2.2 Making data openly accessible	
2.2.1 Accessibility	WP11 outputs will be made openly available.
2.2.2 Method of availability	Online
2.2.3 Methods/software needed to access the data	Web browser for web content, open-source tools for documents.
2.2.4 Access control	Not applicable
2.3 Making data interoperable	
2.3.1 Interoperability	Not applicable
2.4 Data reuse and quality	
2.4.1 Licensing	Data will be licensed using standard licenses (i.e., Creative Commons licenses) in line with the obligations set out in the Grant Agreement.
2.4.2 Data availability and embargo	WP11 data will be available straight after publication.
2.4.3 Reuse restrictions	Permissions are provided through licenses.
2.4.4 Data retention	At least 5 years after the project ends.
2.4.5 Data quality	Partners will check the data prior publishing
3 Allocation of resources	
3.1 Costs	All costs for making data FAIR are integrated within the project.
3.2 Data management responsibilities	Data collectors are all project partners collecting data for project research activities. Partner USC is the partner responsible for data management.
3.3 Costs of preservation	Long term preservation of data and the costs associated with this is ensured by the project and by the partners themselves.
4 Data security	
4.1 Data security	In all cases, data will be stored in at least two locations (i.e., EC portal and NEOGIANT webpage) to provide for data backup, recovery and

	secure storage/archiving. Research data of limited use will be kept on secure, managed storage for a limited time.
5 Ethical aspects	
5.1 Ethical aspects	Informed consent statements for data sharing and long-term preservation will accompany questionnaires dealing with personal data and have been addressed in WP12. Where necessary data will be anonymised
6 Other aspects	
6.1 Other aspects	Not applicable