Plan Overview

A Data Management Plan created using DMPonline

Title: Osteoarthritis treatment

Creator: GRACIA MENDOZA

Principal Investigator: GRACIA MENDOZA

Data Manager: Mónica Paesa

Project Administrator: Cristina Yus

Contributor: Natalia Izquierdo

Affiliation: Other

Funder: National Institutes of Health (NIH)

Template: DMPOnline Template (NWU)

ORCID iD: 0000-0003-2293-363X

Project abstract:

Owing to the high prevalence of degenerative joint disease or osteoarthritis, and that currently the treatments are only palliative, the development of new therapeutic strategies is imperative. The main hypothesis of this project is that novel natural compounds are able to act on the molecular bases of the pathology. Therefore, it will be possible to inhibit or even stop the progression of the disease, recovering the functionality of the joint.

This project will generate three main types of raw data:

1. Percentages of cell viability and qPCR markers expression (inflammation and cartilage degeneration molecular markers).

2. Images from confocal microscopy of immunocytochemistry samples.

3. Images from microscopy of histopathological samples obtained from the in vivo study.

Quantitative data will be recorded in spreadsheets while images will be stored as TIFF or JPEG files not occupying more than 1TB.

The data derived from the proposal will be published in Open Access and stored in an open access repository (Zenodo), which is the recommended repository by our institution (IIS Aragón, Spain). The data derived from this proposal will be published in Open Access which allows to maximize the dissemination of the results obtained avoiding economic or legal implications so that the general public can access them. On the other hand, the ethical and legal aspects of this project are applicable in the in vivo studies which have been authorised by the University of Zaragoza (Spain).

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Grant number / URL: PI21/00911

Copyright information:

Osteoarthritis treatment

Data Collection

What data will you be collecting ?

This project will generate three main types of raw data:
1. Percentages of cell viability and qPCR markers expression (inflammation and cartilage degeneration molecular markers).
2. Images from confocal microscopy of immunocytochemistry samples.
3. Images from microscopy of histopathological samples obtained from the in vivo study.
Quantitative data will be recorded in spreadsheets while images will be stored as TIFF or JPEG files not occupying more than 1TB.

Who will be involved in your data collection ?

Data collection will be performed by Mónica Paesa and Natalia Izquierdo who actively work in the laboratory.

The data will be raw data, both quantitative and images obtained from confocal and optical microscopy, not occupying more than 1TB. The storage of the data will not involved additional costs.

The data will be collected from fluorescence intensity data in the case of viability percentages, while qPCR results will be obtained from relative expression compared to the housekeeping gene expression in the samples. Images will be recorded in microscopes from the SCT Microscopía (IIS Aragón, Spain).

The equipment is annually revised by qualified technicians. The files will be stored with the name of the project, the technique and the date. Mónica Paesa is the Data Manager so she will be in charge of this task, keeping and saving the files.

The experiments will be performed thrice at least in triplicate to assure significant statistics results.

The data derived from the project will be deposited in an open access repository (Zenodo) which is the one recommended by our institution (IIS Aragón, Spain).

Ethics

Give a description of your Ethics

Ethics concerns are involved in in vivo studies regarding the induction of surgical osteoarthritis by the destabilization of medial meniscus, and the further treatment with the natural compounds assayed in the in vitro assays. The approval of the Ethics Committee of the University of Zaragoza (Spain) was obtained (PI65/21).

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Planned Research Outputs

Image - "Optical microscopy images"

Optical microscopy images obtained from the histopathological stainings. The morphology and the inflammatory tissue reaction will be revealed in these images to evaluate the potential reversion of osteoarthritis when animals are treated with the studied compounds.

Image - "Confocal microscopy images"

Confocal microscopy images obtained from protein markers fluorescently labelled. These markers will reveal the expression of inflammation and cartilage degradation related proteins in cell samples treated with the studied natural compounds.

Dataset - "qPCR expression percentages"

Percentages of inflammation and cartilage degradation markers expression obtained from the interpolation of experimental data (treated groups) with housekeeping expression data.

Dataset - "Cell viability percentages"

Percentages of cell viability obtained from the interpolation of experimental groups (treated groups) with control data (not treated cells).

Planned research output details

Title	Type	Anticipated release date	Initial access level	Intended repository(ies)	Anticipated file size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Optical microscopy images	Image	2026-12-31	Open	None specified	97 GB	Creative Commons Attribution Non Commercial No Derivatives 4.0 International	None specified	No	No
Confocal microscopy images	Image	2025-12-31	Open	None specified	1 GB	Creative Commons Attribution Non Commercial No Derivatives 4.0 International	None specified	No	No
qPCR expression percentages	Dataset	2025-12-31	Open	None specified	500 MB	Creative Commons Attribution Non Commercial No Derivatives 4.0 International	None specified	No	No
Cell viability percentages	Dataset	2025-06-01	Open	None specified	100 MB	Creative Commons Attribution Non Commercial No Derivatives 4.0 International	None specified	No	No