

Plan Overview

A Data Management Plan created using DMPTool

Title: FOLLICULAR SYSTEM: IMPROVEMENT OF A NEW PROTOCOL FOR IN VITRO OOCITARY MATURATION IN CATTLE

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Project abstract:

In vitro production of bovine embryos (IVP) has been applied to increase fertility and enhance genetic improvement in beef and dairy cattle despite its recognized low efficiency. In vitro maturation (IVM) is considered to be the main technical bottleneck of IVP in cattle. Current IVM protocols do not reflect the physiological conditions causing a mismatch between nuclear and cytoplasmic oocyte maturation. Oocytes subjected to IVM are derived from follicles at different developmental stages and are heterogeneous with regard to chromatin configuration and transcripts accumulation. In previous studies funded by FAPESP, we developed the Follicular System, which includes a strategy to harvest a more homogeneous population of oocytes, as well as a sequential culture system adjusted to the oocyte developmental stage, mimicking the intrafollicular environment before (pre IVM/FS phase) and after ovulation (IVM/FS phase). The aim of this

proposal is to improve the IVM phase of the Follicular System by testing the addition of intrafollicular peptides that regulate the ovulatory cascade to the culture medium [FLI combination (FGF2 + LIF + IGF1); neurotensin (NTS) and neuregulin 1 (NRG1), potentially benefiting oocyte developmental competence and consequently IVP.

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Data Collection

What data will you collect or create?

Data will be obtained from in vitro oocyte maturation and in vitro embryo production. The data will be shown the possible alterations during the treatment during IVM in cattle.

How will the data be collected or created?

COCs will be matured with treatment or not and submitted to IFV and the data will be evaluated by meiotic progression, rate of embryo production, and genic expression of genes involved in this process.

Documentation and Metadata

What documentation and metadata will accompany the data?

Graphics, figures, and tables.

Ethics and Legal Compliance

How will you manage any ethical issues?

Nothing to declare.

How will you manage copyright and Intellectual Property Rights (IP/IPR) issues?

Nothing to declare.

Storage and Backup

How will the data be stored and backed up during the research?

Data will be backed up with copies in hard drives in laboratory computers, as well as the university

offers google Drive, which assists in data storage.

How will you manage access and security?

All students involved in the project will have access to the data, but just the responsible researcher will be edit and update the backup.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

The data will be shared with the scientific community through manuscript publications. In addition, they will serve to originate future projects.

What is the long-term preservation plan for the dataset?

We will stock the scientific data in drives of laboratory and institutional server.

Data Sharing

How will you share the data?

The data will be published in scientific congress and scientific journals.

Are any restrictions on data sharing required?

There aren't restrictions.

Responsibilities and Resources

Who will be responsible for data management?

The data acquired during the project will be managed by the responsible researcher.

What resources will you require to deliver your plan?

Nothing to declare.
