
Plan Overview

A Data Management Plan created using DMPTool

Title: Thyroid hormones and the relation to the reproductive-somatotropic axis and their possible role in embryonic development in response to maternal stress in zebrafish (*Danio rerio*)

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Project abstract:

In vertebrates thyroid hormones are involved in the regulation of various physiological processes such as growth, metabolism, behavior, stress and reproductive system. In reproduction, our previous results (FAPESP 2017/ 15793-7; FAPESP BEPE 2018/15319-6) showed strong evidence between thyroid hormones and the hypothalamic-pituitary-gonadal axis in zebrafish. In addition, thyroid hormones are also important for embryonic development, although high doses of these can be impaired to growth and cause mortality. Based on this, the present project will have as objectives: 1) evaluate the molecular mechanisms involved in the interaction of thyroid hormones with Fsh; 2) investigate if a maternal stress increases plasma and ovarian levels of thyroid hormones; and 3) the possible increase in these hormones affects the development of the offspring. To response these objectives, testicular culture, RNAseq, GapmeR technology, histomorphometry, ELISA and gene expression techniques will be employed. Thus, it is expected that the results obtained in this project may generate knowledge about the regulation of thyroid hormones in fish testicular function. Finally, to evaluate the possible involvement of thyroid hormones in maternal stress and their impacts on embryonic development. Overall, this project will contribute to the reproductive physiology of teleost fish, including species of zootechnical interest.

Start date: 06-01-2020

End date: 01-31-2024

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Thyroid hormones and the relation to the reproductive-somatotropic axis and their possible role in embryonic development in response to maternal stress in zebrafish (*Danio rerio*)

Data Collection

What data will you collect or create?

- Data on *in vitro* testis organ culture
- Testis transcriptome
- GapmeR technology
- Histomorphometric analysis
- Gene expression
- Thyroid hormones profile
- All the data will be collected in different experiments.

How will the data be collected or created?

Data will be collected at each experiment and tabulated in Excel spreadsheets. Data analysis will be performed using Graphpad software.

Documentation and Metadata

What documentation and metadata will accompany the data?

Protocols and detailed notes on each experiment will be recorded in the laboratory notebooks.

Ethics and Legal Compliance

How will you manage any ethical issues?

The Project was submitted to the Ethics Committee on the Use of Animals (CEUA) - UNESP/Botucatu (CEUA number 8520250320).

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

The data will be kept confidential until publication in indexed journals.

Storage and Backup

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

The all data will be stored by principal investigators in the cloud and external hard drives, with daily backups, and with restricted access to the researchers team involved in the project. In addition, data and metadata will be published through a platform made available by UNESP, available at: <https://repositorio.unesp.br/>.

How will you manage access and security?

UNESP will be responsible for your safety for a specific period. UNESP will provide the platform: <https://repositorio.unesp.br/>.

Selection and Preservation

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

Transcriptome data of testis, GapmeR technology, histomorphometric analysis must be shared and preserved.

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

Data sets with long-term value will be preserved in the cloud and on external hard drives.

Data Sharing

How will you share the data?

Data will be shared with the scientific community through publication in indexed journals.

Are any restrictions on data sharing required?

There are no legal or ethical restrictions. However, the data will be kept confidential until publication in indexed journals.

Responsibilities and Resources

Who will be responsible for data management?

Principal investigator, researcher team, UNESP.

What resources will you require to deliver your plan?

The principal investigator will keep all data updates, as well as backups, and may request technical assistance from UNESP's/Botucatu IT sector.