Using IL6 as a Survival Factor for Bovine Embryos

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Introduction

During this semester, Fall 2022, I spent 6-8 hours a week working in Dr. Alan Ealy's IVF Lab alongside graduate student, MaryAli Oliver. By working in the lab I was able to assist MaryAli in different experiments that included supplementing IL6 to IVP bovine embryos and observing the effects of cryopreservation, embryonic viability and extended culture.

7 and 7 Synching Protocol

While working in the lab I assisted on other projects which involved syncing cows using a 7 and 7 protocol for our day 22 embryo transfer project.

Day 1:
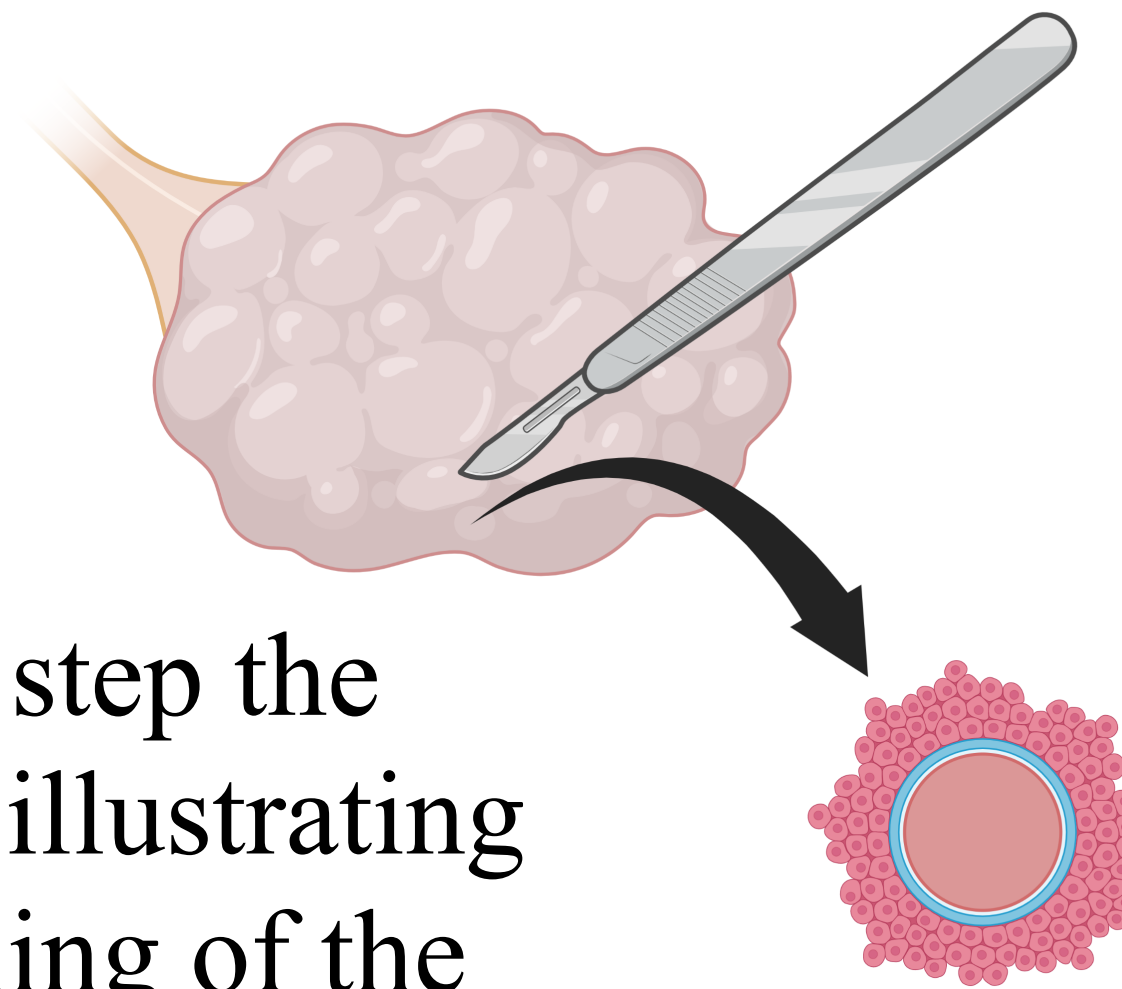We placed CIDRs and gave PGF2α IM.
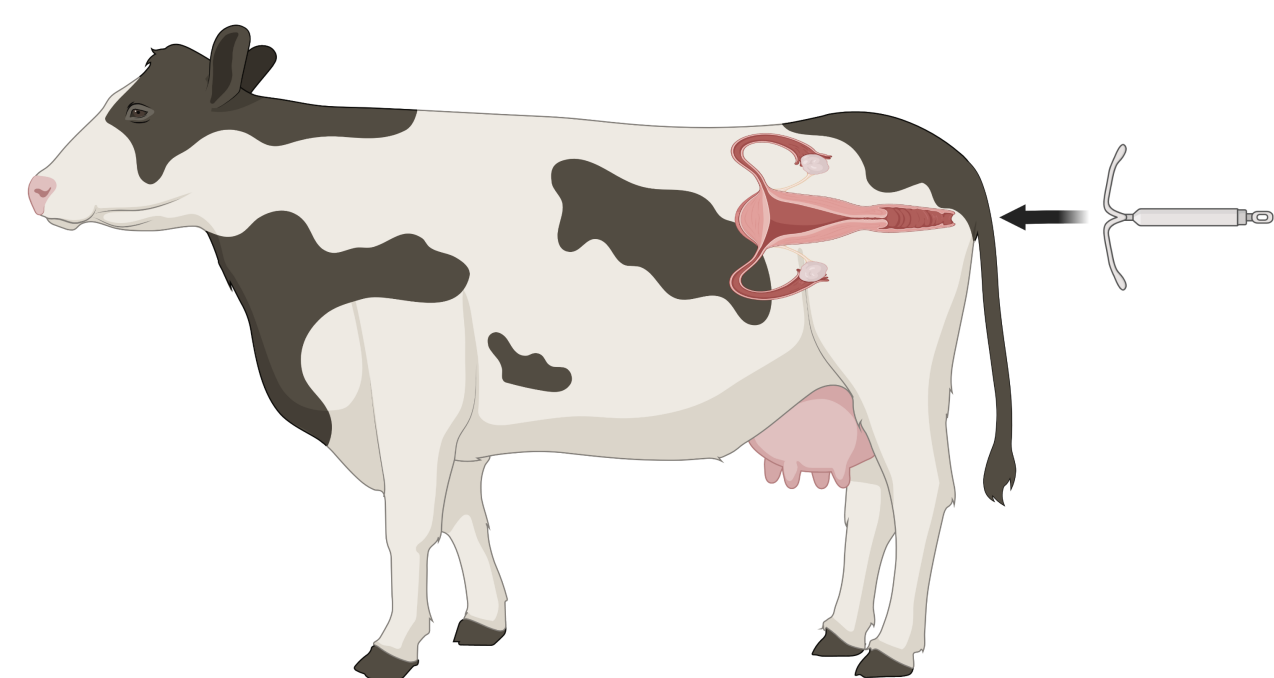
Day 7:
We gave GNRH IM.

Day 14:
We pulled CIDRs and gave PGF2α IM.

After signs of estrus were detected, we would then proceed by artificial inseminating the cow and performing embryo transfer one week later.
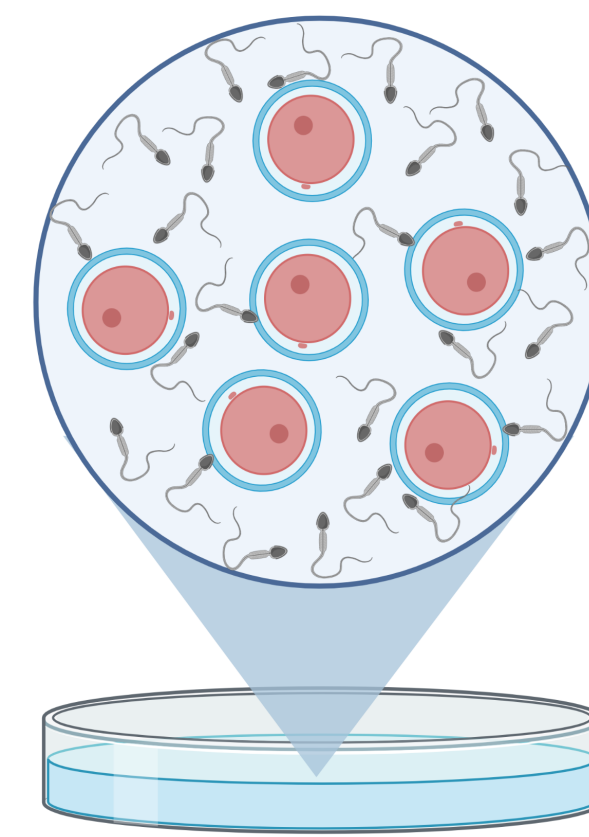
Project/ Assignments

Day -1: In Vitro Maturation:

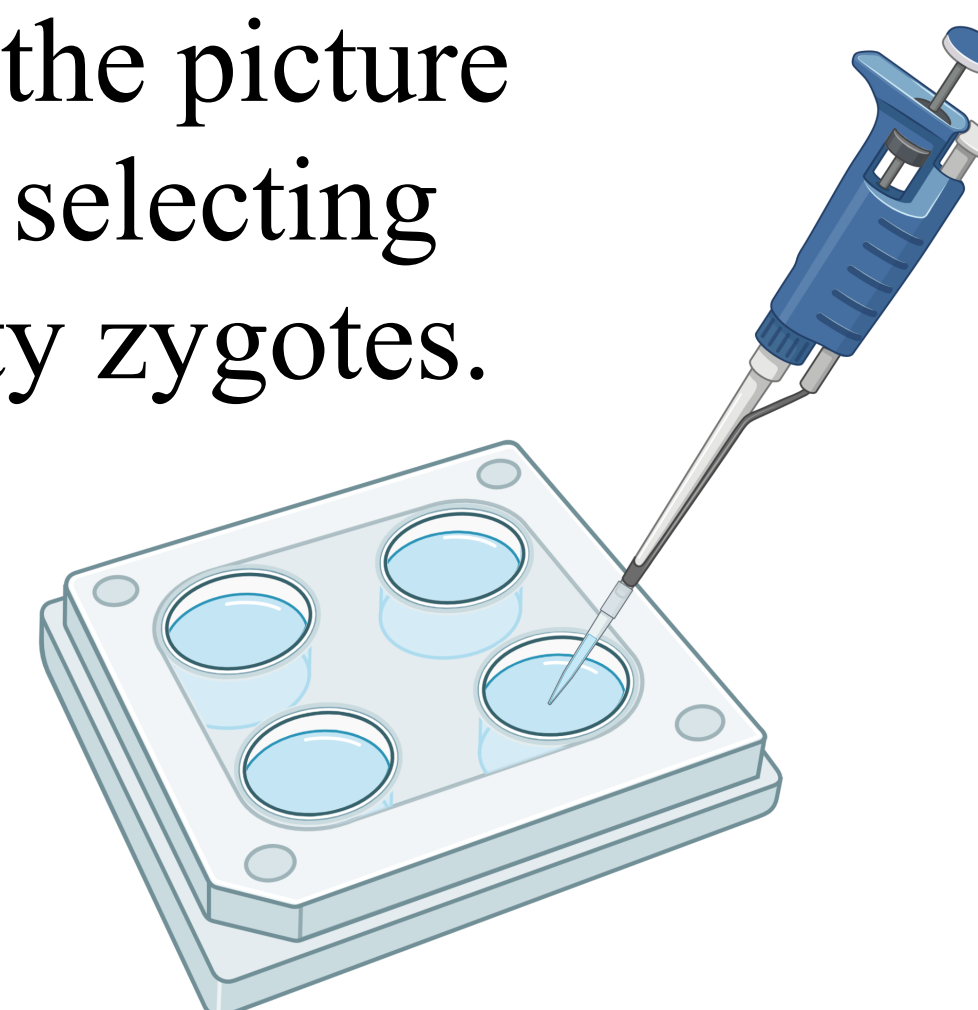In this step the picture is illustrating the slashing of the ovaries to collect oocytes.
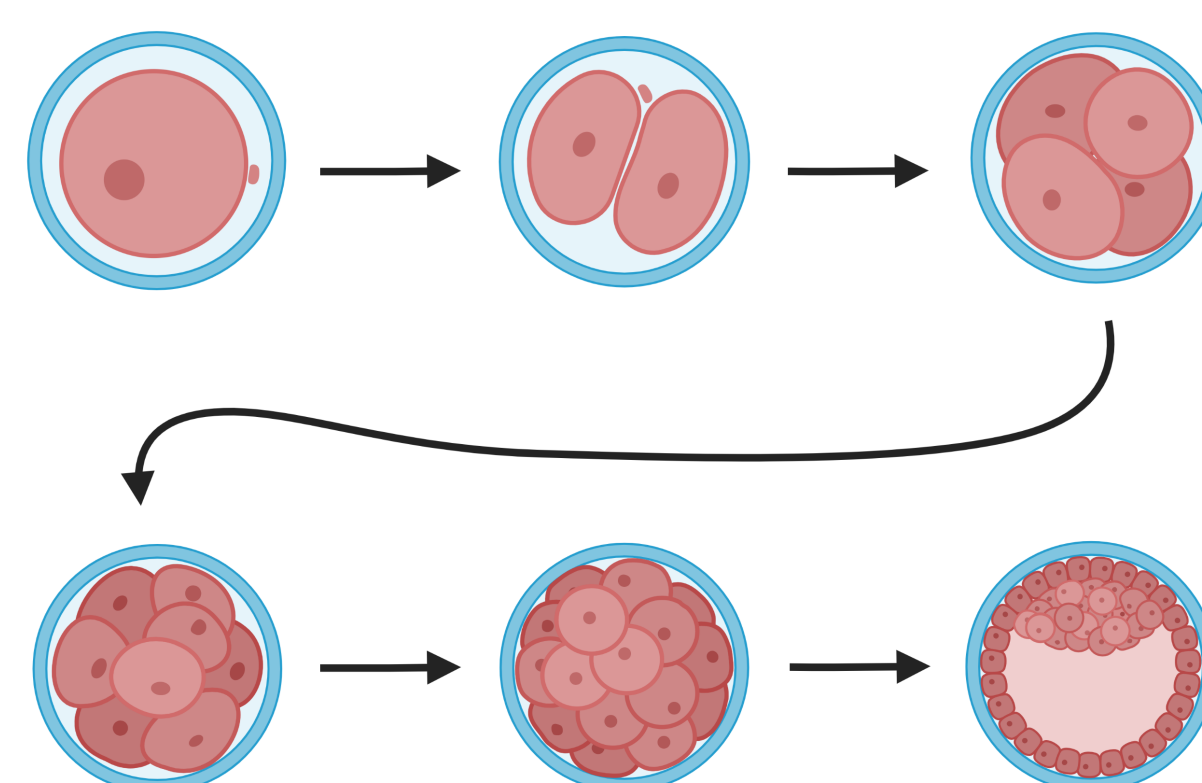
Day 0: In Vitro Fertilization:

In this step the picture is illustrating the sperm moving to the oocyte.

Day 1: In Vitro Culture:

In this step the picture illustrates selecting good quality zygotes.

Assessing Embryo Development:

This picture illustrates assessing cleavage.

Embryo Transfer

Another project I assisted with was embryo transfer. In this project we took the embryos that MaryAli treated with IL6 and transferred them into the cow.

In this picture I am administering lidocaine for an epidural block.

Results/ Conclusion

By working in Dr. Alan Ealy's lab I will be able to apply the knowledge of reproduction and IVF to my future career. In this lab I was able to build confidence and critical thinking skills. In addition, I am now able to understand the importance of improving embryo quality in cattle.

In the picture above I am searching for a corpus luteum via ultrasound with the assistance of Dr. Mercadante.

Images from BioRender