

Growth Phase

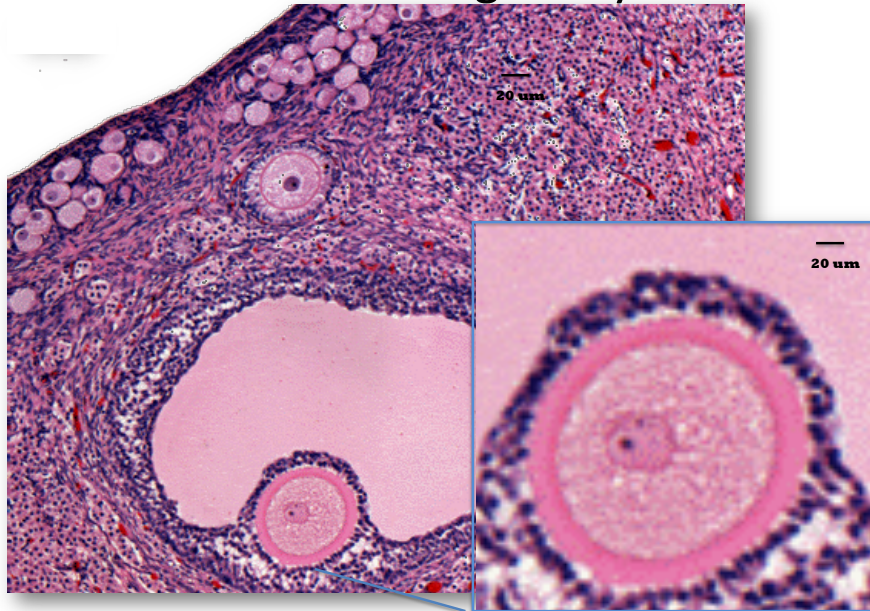
For Follicle (FOLLICULOGENESIS)
For oocyte (OOGENESIS)

The oocyte, independently of the follicle in which they are enclosed and regardless of their growth stage, are arrested in PROPHASE I of meiosis.

LESSON WORK 1 UNIT 1

Group number _____ date _____

Adult dog ovary



You must to be aware that with the current technological advances we are able to use a very small amount of ovarian oocytes for performing the in vitro maturation (IVM) procedures.

This aspect may be appreciated by looking with attention to this ovary section. Please respond to the following questions

1. How many oocytes do you recognized into the ovary?

Indicate the relative number _____

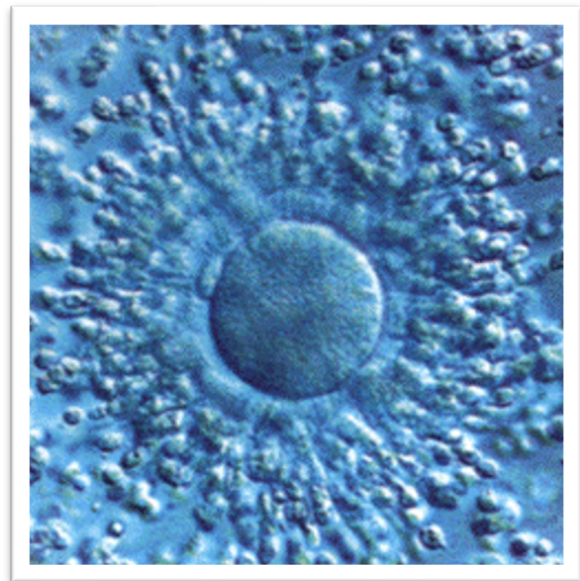
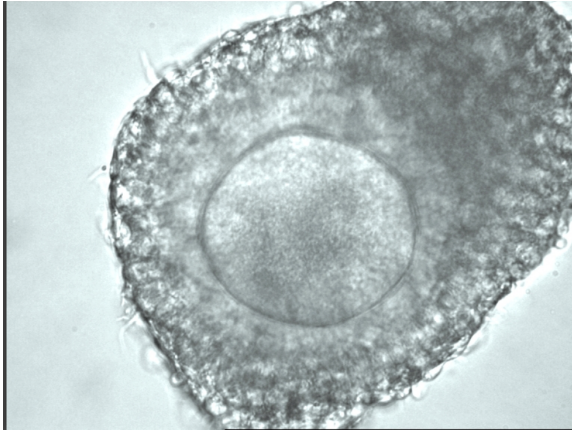
2. How many of them, in your opinion, are suitable for IVM (Please indicate them with arrows)?
3. How do you select the oocyte/s suitable for IVM? Please indicate the biological reason

How many other categories of ovarian follicles can you identify inside the present section

- 1.
- 2.
- 3.

Which are the morphological differences between the categories of oocytes inside the pictures

LESSON WORK 2 UNIT 1



Could you please indicate the major differences between these two cumulus oocyte complexes?

LEFT OOCYTE

1. With a red pen outlines the oocytes
2. With a black/blue pen outlines the other structures

3. Briefly described the cumulus cells

Number of layers

Overall aspect

Right oocyte

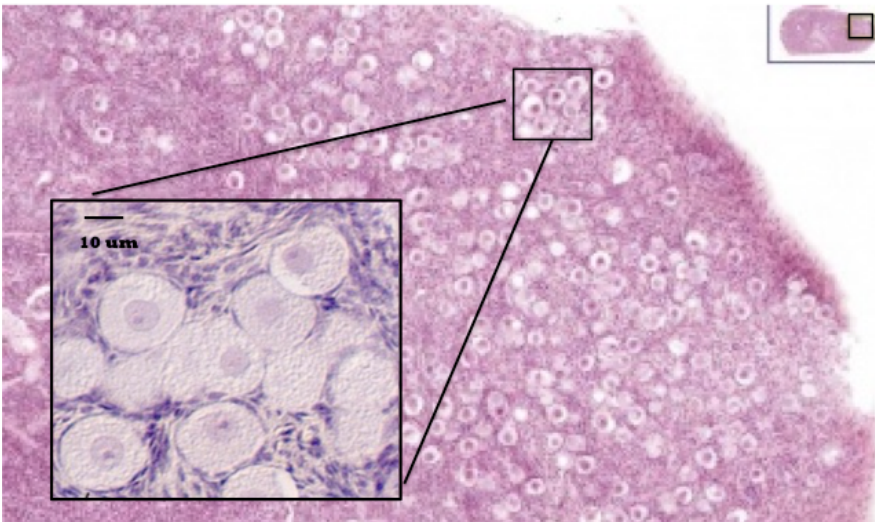
1. With a red pen outlines the oocytes
2. With a black/blue pen outlines the other structures

3. Briefly described the cumulus cells

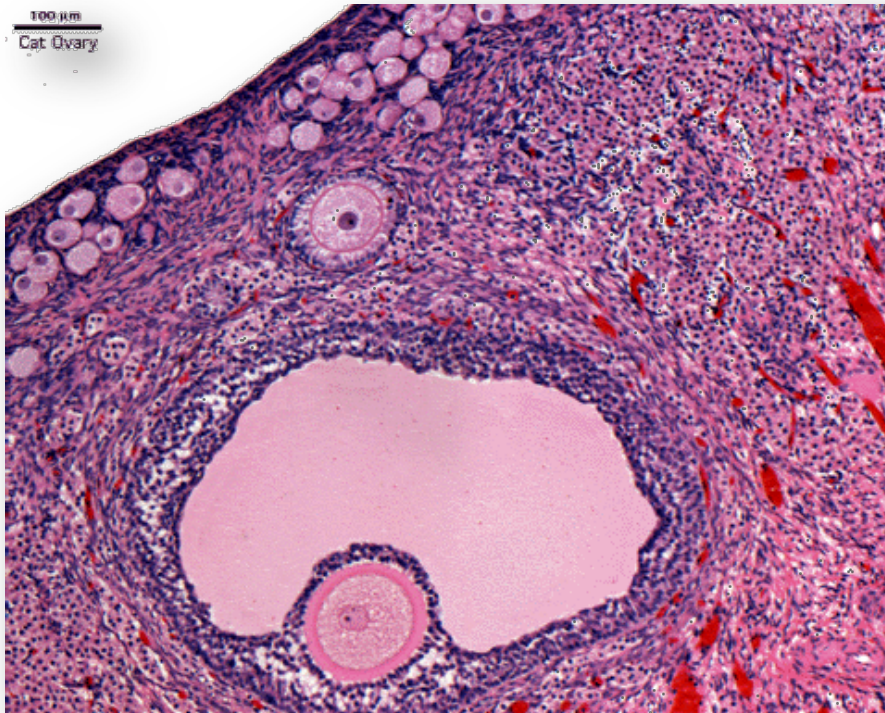
Number of layers

Overall aspect

LESSON WORK 3 UNIT 1



1. Could you indicate with red and black arrows the cytoplasm and the nuclei, respectively, of these oocytes enclosed into a foetal ovary?
2. Could you describe the nuclear stage characterizing these oocytes?



1. Indicated on the image the number corresponding to the different categories of follicles:

N. 1, primary follicles

N. 2, secondary or preantral follicles

N. 3, tertiary or antral follicles

2. Could you indicate with red and black arrows the cytoplasm and the nuclei, respectively, of oocytes belonging to the different ovarian follicle categories?

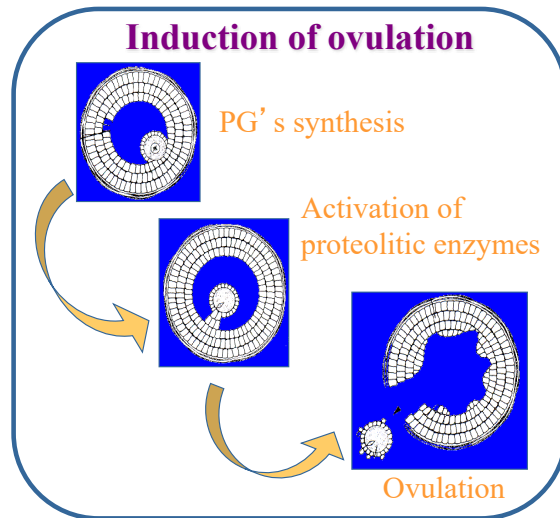
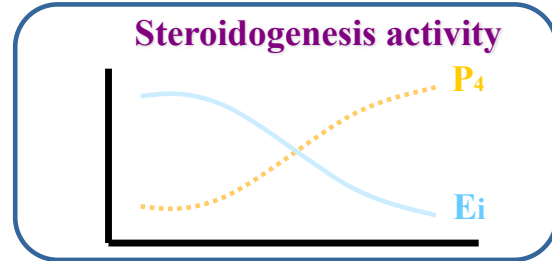
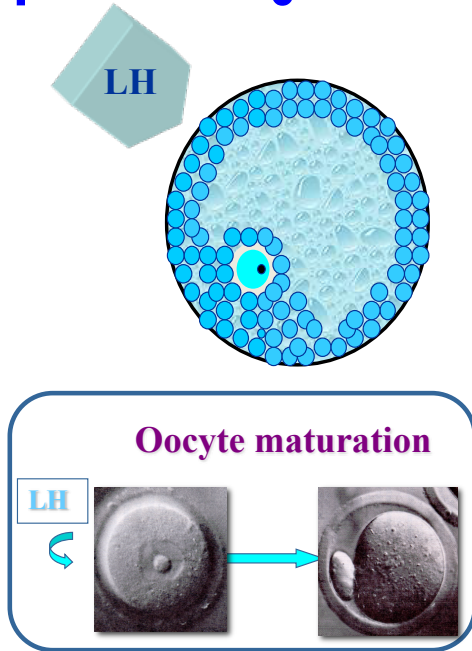
3. Could you describe the nuclear stage characterizing oocytes belonging to the different ovarian follicle categories?

N. 1, oocyte/s enclosed in primary follicles

N. 2, oocyte/s enclosed in secondary or preantral follicles

N. 3, oocyte/s enclosed in tertiary or antral follicles

Maturation phase post-natal oogenesis



1 Please describe in 15 minutes the events described into the three boxes displaying different events activated by LH peak into a fully grown oocyte enclosed into a preovulatory follicles

LESSON WORK 5 UNIT 1



A OVARY FROM PIG (a pluri ovulatory specie)

Is it from a pre-pubertal o pubertal animal?

Distinguish the follicular structures present in this ovary.

Might this ovary be used to perform IVM?

Explain why?

LESSON WORK 6 UNIT 1

1. When the LH surge occurs in the estrus cycle?

Pro-estro

Estro

Diestro

Anestro

2. When the LH surge occurs in the menstrual cycle?

Prior ovulation

During luteal phase

During follicular phase

NOTES:

ANIMALS (Estral cycle)

PRO-ESTRO

ESTRO (from LH surge to the release of the oocyte)

DIESTRO

ANESTRO nonbreeding season or period of rest in the female mammal

WOMAN (Menstrual cycle)

follicular phase

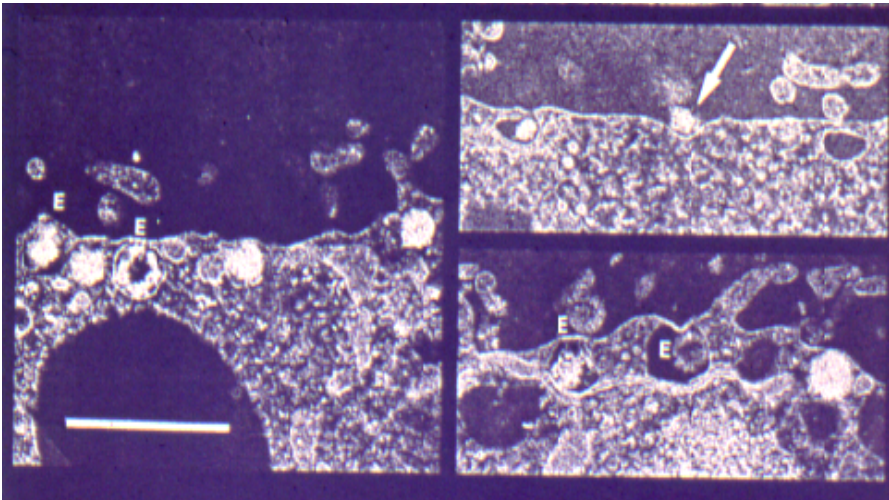
ovulation

luteal phase

LESSON WORK 6 UNIT 1

Group number _____

Premature cortical granules case



Premise

The pictures displayed mature oocytes that have undergone cortical granules exocytosis as a consequence of their cryopreservation

Question

1. Could you explain which may be the consequence of that?
2. How can you overcome this problem in order to still use these oocytes in assisted reproductive technologies?