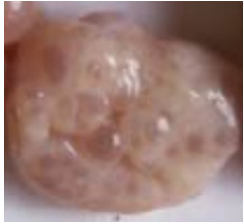


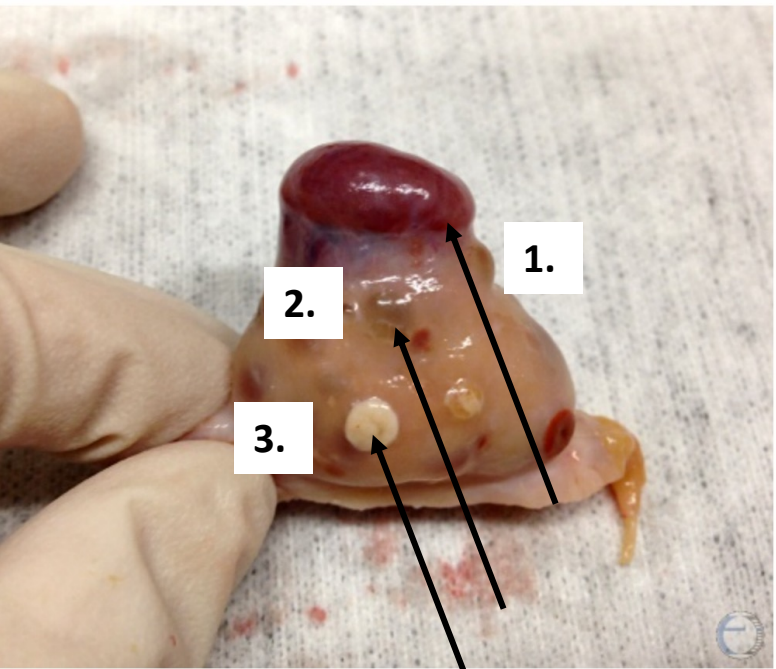
HOME WORK 1 UNIT 1



Please insert in each image the correct number to classify the ovary on the basis of the following reproductive cycle

1. Prepubertal animal
2. Proestrus/estrus
3. Early diestrus
4. Late diestrus

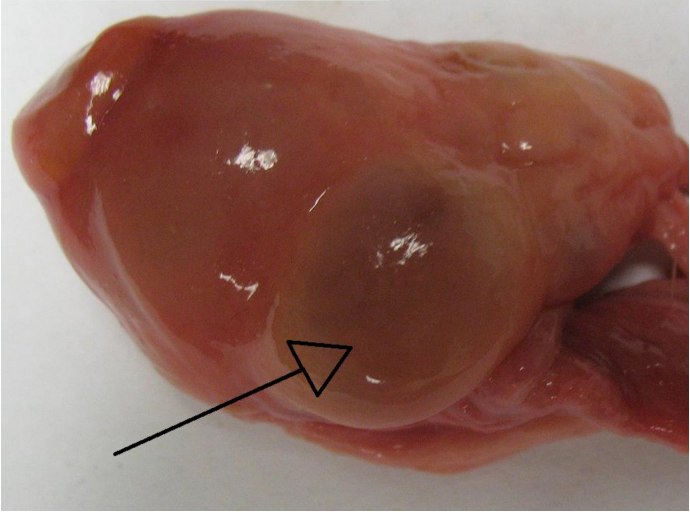




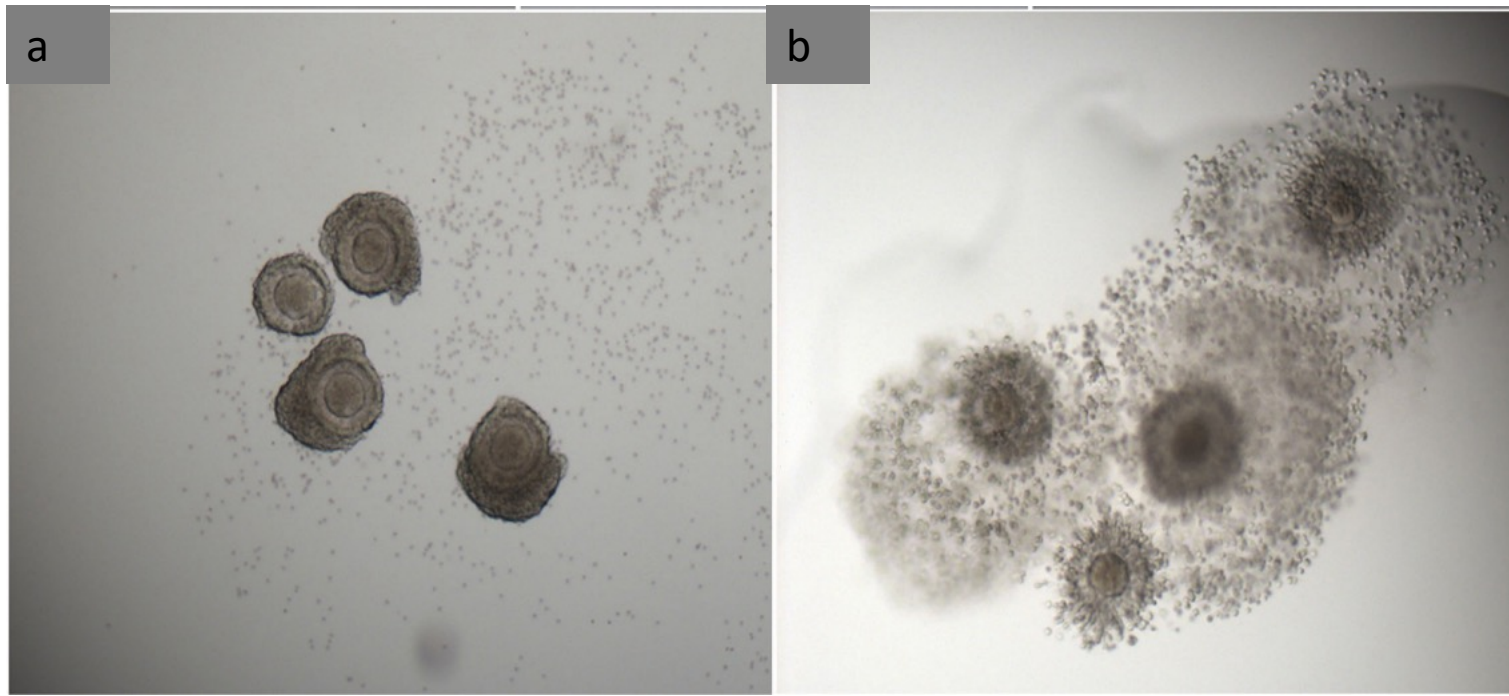
Insert the description of these structures:

- 1.
- 2.
- 3.

Insert the description of this structure:



HOME WORK 2 UNIT 1



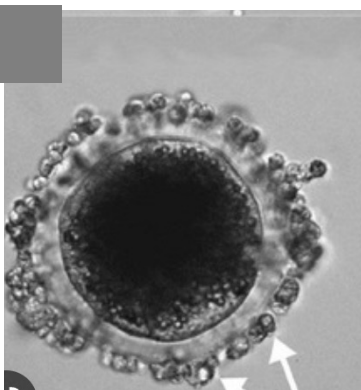
Describe the source of these cumulus oocytes complexes (COCs).

a.

b.

Then do you observe any diversity in the COCs of Figure b?

a



Describe these cumulus oocyte complexes (COCs) isolated from one prepubertal swine ovary

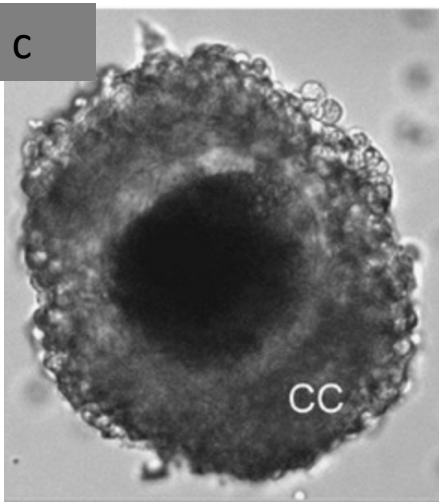
a.

b



b.

c



c.

HOME WORK 3 UNIT 1

Organize the images considering the oogenesis: begin the description starting from the more immature cell. Fill one separate form for each cell and enumerate it based on oocyte chronology (1 the more immature up to 4 the more advanced ones)

CELL 1

Typology on the basis of nuclear stage (eg. GV oocyte, Metaphase oocyte etc.)

Follicle that enclose this oocyte (eg primordial, secondary/preantral, antral or preovulatory follicles etc.)

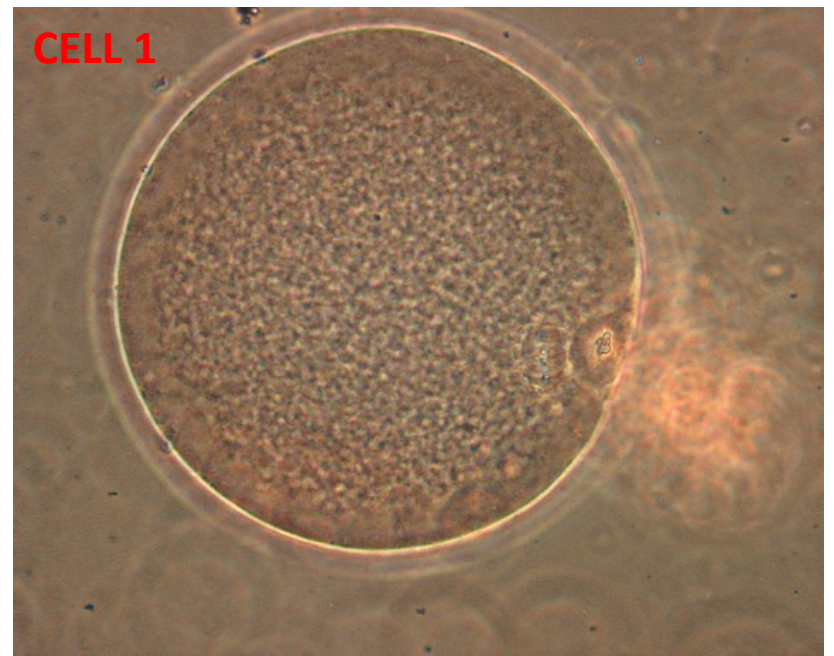
Use a red arrow to indicate the nucleus

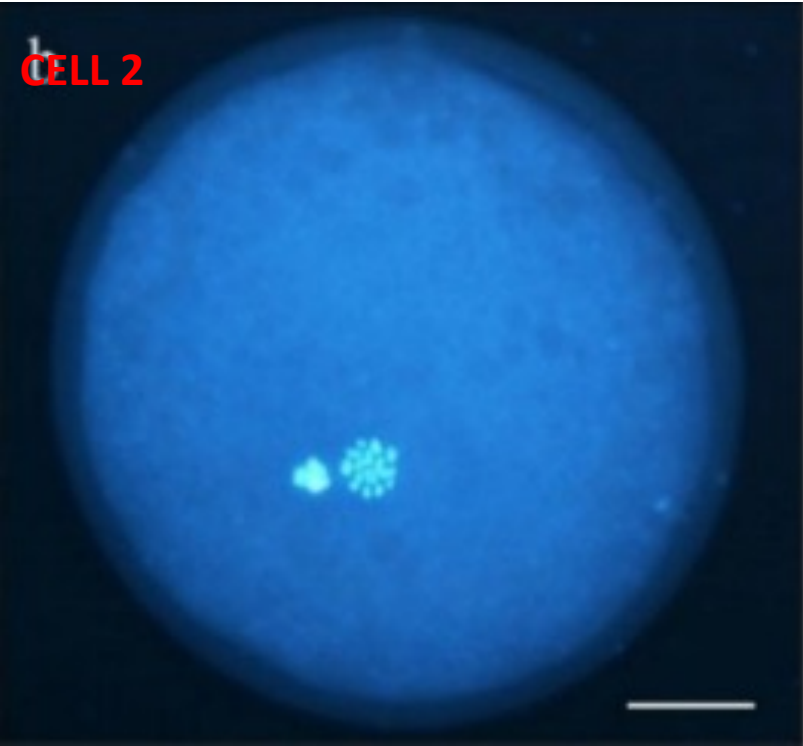
Use a blue arrow to indicate the nuclear membrane

Use a black arrow to describe the nucleolus

Describe the staining used to detect the chromatin (if possible)

Other structures





CELL 2

Typology on the basis of nuclear stage (eg. GV oocyte, Metaphase oocyte etc.)

Follicle that enclose this oocyte (eg primordial, secondary/preantral, antral or preovulatory follicles etc.)

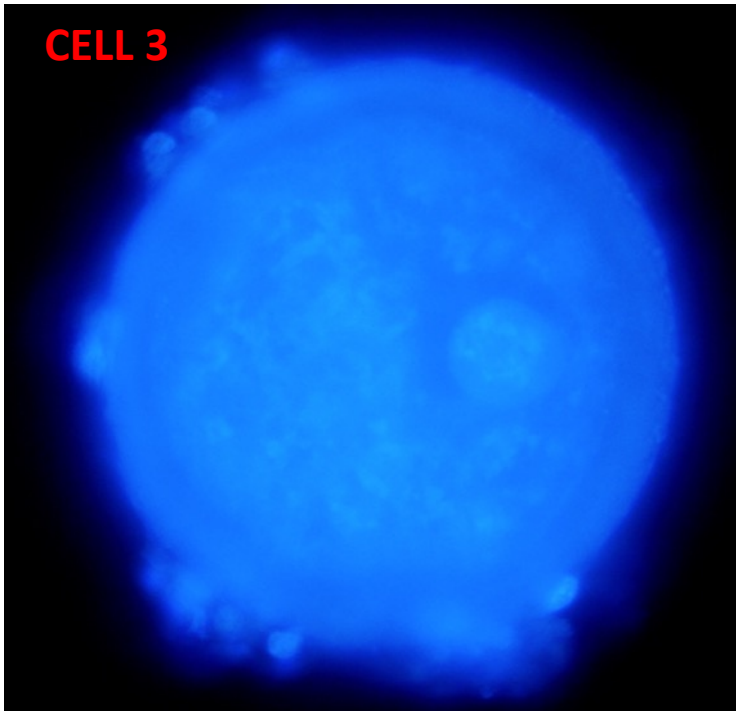
Use a red arrow to indicate the nucleus

Use a blue arrow to indicate the nuclear membrane

Use a black arrow to describe the nucleolus

Describe the staining used to detect the chromatin (if possible)

Other structures



CELL 3

Typology on the basis of nuclear stage (eg. GV oocyte, Metaphase oocyte etc.)

Follicle that enclose this oocyte (eg primordial, secondary/preantral, antral or preovulatory follicles etc.)

Use a red arrow to indicate the nucleus

Use a blue arrow to indicate the nuclear membrane

Use a black arrow to describe the nucleolus

Describe the staining used to detect the chromatin (if possible)

Other structures

HOME WORK 4 UNIT 1

PREMISES:

The process of chromatin condensation defines the degree of oocyte specialization.

This is extremely useful to select from an ovary which oocyte can be used with success in the IVM protocols.

This experiment clarifies how extensive chromatin remodelling is linked to oocyte genome transcription inhibition.

Could you explain this experiment and interpret the results?

Read with attention the figure legend and the material and methods before completing the **result** and **conclusion** sections

FIGURE LEGEND

BrUTP: bromouridine-triphosphate (BrUTP) substitutes the UrindinTriPhosphate during mRNA transcription

Propidium iodide: nucleic acids supra-vital dye

PA: Pre-Antral follicles

A: Antral follicles

MATERIAL and METHODS

1. Oocyte transcription activity is performed in mice oocytes of different stage of oogenesis by detecting the accumulation into the nucleus of BrUTP (green fluorescence).
2. The chromatin configuration is visualized by propidium iodide (red fluorescence).

RESULTS

1. Analyze the different chromatin configurations displayed by the GVs of the above figure

2. Describe how transcription change during oocyte growth

CONCLUSION

Link the relation existing between chromatin configuration and oocyte genome transcription and speculated why these processes may be related to the developmental competence of oocyte.

