

Define the following:

Luteinization: the process by which granulosa cells (GC) & theca cells (SLC) are transformed into luteal cells

Luteolysis: the process whereby luteal tissue (CL) undergoes regression & cell death.

Luteolytic: a material that promotes luteolysis (cell death / CL death)

Luteotropic: having a stimulating action on the development or assisting in maintaining the CL.

What inhibits the frequency of the release of luteinizing hormone?

Progesterone

LH

Where does Luteinizing Hormone come from?

Anterior pituitary

In metestrus, uterine secretions are increased and muscle contractions are decreased.

What are the uterine secretions?

uterine milk (histotroph)

What is the enzyme responsible for the breakdown of the basement membrane?

collagenase

What hormone increases the production of the enzyme we stated above?

Progesterone

What forms the connective tissue structure of the Corpus Luteum?

Basement Membrane

An ovulatory follicle weighs approximately 40 mg while the corpus luteum weighs approximately 400 - 700 mg.

How many folds do small luteal cells increase? hyperplasia

5-fold

How many folds do large luteal cells increase? hyper trophy

2-fold

Large luteal cells have a round nucleus and abundant mitochondria. They produce ~85% of progesterone. They have a PGF2 α receptor. They produce Relaxin as well as oxytocin. The production of oxytocin signals PGF2A from the uterus to cause luteolysis.

Small luteal cells have irregular nucleus. They increase the percentage of lipid droplets. They do not have a PGF2A receptor, but they do have an oxytocin receptor. And lastly.... They also produce progesterone.

The steroidogenic potential is determined by the total number of.....

- a. Theca cells
- b. GnRH
- c. **Granulosa cells**
- d. Cholesterol

Is cholesterol hydrophobic or hydrophilic? Phobic

hydrophobic

True / False: Progesterone **suppresses** GnRH secretion so therefore it's a positive feedback.

(-) Negative feedback

True / False: Progesterone **promotes** the development of the mammary glands so it's a positive feedback

True / False: Progesterone induces max secretion of histotroph production so it's a negative feedback.

(+) Positive feedback

True / False: Progesterone causes an increase of myometrial contractions.

Progesterone "quiets" myometrial contractions

Explain the formation of the CH: • Bloody body

* follicle "implodes" = blood vessels rupture = hemorrhage

- Granulosa + theca cells mix.

If an ewe has an intact uterus, how many days does it take for the CL to regress?

15-17 days

If an ewe has a contralateral intact uterine horn (same side as CL), how many days does it take for the CL to regress?

15-17 days

If an ewe has no intact uterus, how many days does it take for the CL to regress?

148 days (almost)

If an ewe has an ipsilateral intact uterine horn (opposite side of the CL), how many days does it take for the CL to regress?

35 days

Key Hormones Involved:	Hormone Source:
PGF2a	uterus ovary (CL)
Oxytocin	Hypothalamus ovary (CL)
Progesterone	ovary (CL) placenta