

3 RESULTS

Table 1. Presence of COX-2 according to the reproductive stage in queens.

Stage	Positive samples to COX-2	% positivity to COX-2
D<30 (n = 4)	n = 1	25%
D30 (n = 3)	n = 2	66%
D40 (n = 3)	n = 3	100%
D50 (n = 1)	n = 1	100%
D60 (n = 8)	n = 8	100%
Total of pregnant samples (n = 19)	n = 15	79%
Cycling (n = 7)	n = 0	0%
Pseudopregnant (n = 5)	n = 0	0%
Total of samples (n = 31)	n = 16	48%

- n = 1 queen D<30 positive for COX-2 in LZ and JZ
- n = 15 pregnant queens positive for COX-2 in the JZ (79% of total pregnant queens (n = 19)).
- 100% positivity from D40 onwards (Fig. 3), mainly in the syncytiotrophoblast (ST) of the JZ (Fig. 4).
- n = 3 queens D60 positive for COX-2 in placental epithelium
- Absence of COX-2 positivity in non-pregnant cats

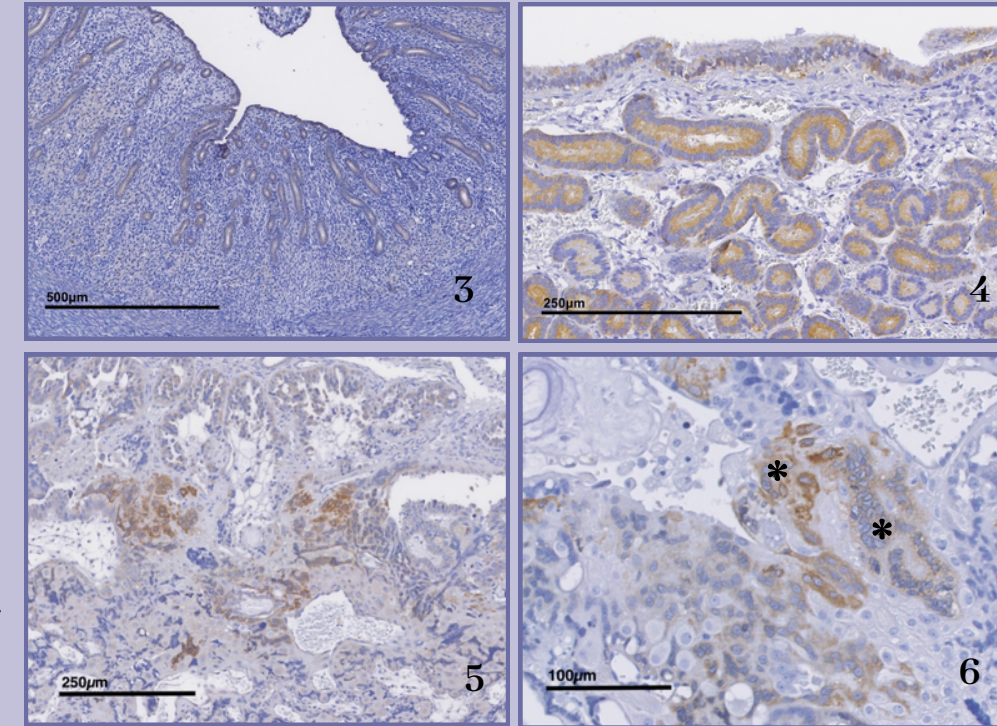


Fig. 3. Negative control (pregnant mare endometrium); Fig. 4. Positive control (cycling mare endometrium; Fig. 5. Queen placenta; D40. Presence of COX-2 is observed in the JZ; Fig. 6. Queen placenta; D60. COX-2 in the JZ, specifically in the syncytiotrophoblasts (ST) (*).

4 DISCUSSION

- Reliability of positive and negative controls (Fig.3, 4) is confirmed thanks to the study by Boerboom et al. 2004
- COX-2 expression in the placenta increases as pregnancy progresses, particularly in the ST of the JZ.
- Increase of expression of COX-2 could be induced by TGF- β , produced by the ST (Cerqueira & Karumanchi, 2012).
- This increase may facilitate the transfer of prostaglandins (PGE2 and PGF2a) to the myometrium (Gibb & Sun, 1996).
- Possible spatial change in COX-2 expression from the labyrinth zone (LZ) to the JZ as pregnancy advances (Xu et al. 2005).

5 CONCLUSIONS

COX-2 progressively increases in the queens' placenta as gestation advances, especially from 40 days onwards.

Absence of COX-2 in non-pregnant queens suggests its relationship with gestation

Results provide a basis for future studies. These could include qPCR and more samples of each group.

6 REFERENCES



The **zonary endotheliocorial placenta** of the queen consists of three layers (Fig. 1): the lamellar zone (LZ), the junctional zone (JZ), and the glandular zone (GZ) (Leiser, R., & Koob, B. 1993).

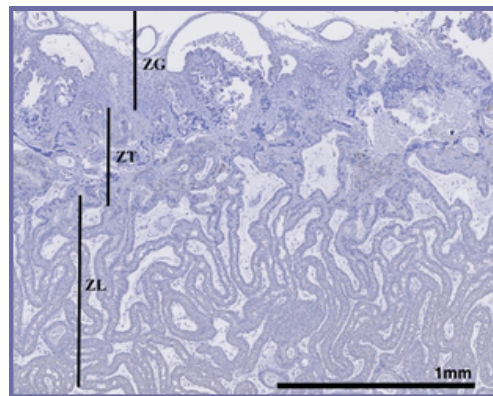


Figure 1. Histology of a queen placenta. Lamellar Zone (LZ), Transition Zone (TZ), and Glandular Zone (GZ).

COX-2 is crucial for producing **PGF2a** and **PGE2**, key compounds in various reproductive stages. However, its expression varies across species in the female reproductive system (Boerboom et al. 2004).

1 OBJECTIVE

Determine and characterize the **presence of COX-2 in the junctional zone (JZ)** of the queens' placenta during different reproductive stages using immunohistochemical techniques.

2 MATERIALS & METHODS

The study had **n = 2** control samples and **n = 31** queens. Queens underwent into a routine OHE. Through different techniques, they were classified according to their reproductive stage (Fig. 2). Uterine and placental biopsies were obtained and processed for immunohistochemistry.

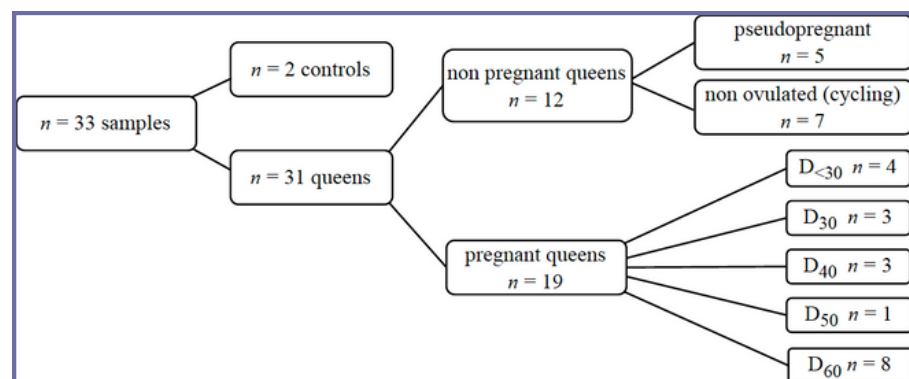


Figure 2. Classification of the samples according to the reproductive stage of each of the 31 cats in the study.