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Relative gene expression of *esr1* and *esr2* in the uterine horns of bitches along diestrus

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The diestrus stage in the bitch is characterized by the increase of Progesterone (P4) in the first half of diestrus and by fluctuations of Estradiol (E2) in the second half of diestrus. E2 has higher concentrations in the middle of the diestrus around day 40, declining later (Papa and Hoffmann, *Reproduction in Domestic Animals*, 46: 750-756, 2011). The effects mediated by E2 depend on the binding of E2 to the estrogen receptors. In general, ER α (whose gene is *ESR1*) promotes cell proliferation and ER β (*ESR2*) appears to play an antiproliferation role (Vivar et al., *J Biol Chem*, 285: 22059-22066, 2010). The objective of this study was to determine the gene expression of *ESR1* and *ESR2* in the uterus of bitches during diestrus (days 10, 20, 30, 40 and 50 post-ovulation). For this, the uterine horns of 25 clinically healthy bitches of different ages and with no defined racial pattern were used. The uterus was obtained from dogs that underwent ovariohysterectomy (OSH) at 10, 20, 30, 40 and 50 days after ovulation, thus constituting the five groups studied in this experiment (n = 5 / group). The uterine horns were harvested and stored in TRIzol® (Thermo Fisher Scientific, California, USA) in the freezer at -80 ° C and thereafter the relative abundance of mRNA of *ESR1* and *ESR2* were evaluated by RT-qPCR, using GAPDH as reference gene. The data were evaluated using the Kruskal-Wallis test followed by Student Newman (p < 0.05). *ESR2* presented higher relative gene expression (p < 0.05) at 10, 20 and 30 days after ovulation when compared to 40 and 50 days. There was no significant statistical difference for the relative gene expression of *ESR1* in the studied groups. It is concluded that only the gene expression of *ESR2* undergoes alteration during diestrus, decreasing after day 30 post-ovulation, and may have been a consequence of the incremental increase of E2. Support: FAPESP (process number: 2014/00739-9) and CAPES - Financing Code 001.