

## **Differential expression of microRNAs predicted against connexins 37 and 43 mRNA between oocytes and cumulus cells in canines.**

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Connexins 37 (Cx37) and 43 (Cx43) participate in the bi-directional communication between the oocyte and its companion cumulus cells (CCs). Several post-translational factors, including miRNA, control connexins; therefore, the aim was to determine the expression levels of miRNAs predicted against canine *Cx37* and *Cx43* mRNA in CCs and oocytes. Cumulus oocyte complexes were retrieved from small (~0.25–0.39 mm) and medium (~0.4–3.9 mm) antral follicles from more than 100 dog ovaries following ovariectomies. CCs were mechanically removed from the oocytes. Specific miRNAs regulating *Cx37* and *Cx43* genes were selected from miRNA databases. The best miRNA for each target gene (*Cx37* and *Cx43*) was selected considering qPCR performance (low ct value and specific melt curve) and target prediction probability with a binding p-value of 1.0, choosing for the study *cfa-miR-1838* against *Cx37* and *cfa-miR-130b* against *Cx43*. The expression level of each miRNA in the oocytes and CCs from both follicle sizes was evaluated using ANOVA. The relative abundance of *cfa-miR-1838* was the highest ( $P < 0.05$ ) in oocytes from the small follicles, whereas the lowest ( $P < 0.05$ ) value was observed in CCs from medium antral follicles. *cfa-miR-130b* abundance was higher ( $P < 0.05$ ) in oocytes compared to CCs in both follicle sizes. Therefore, the expression of *cfa-miR-1838* and *cfa-miR-130b* differed ( $P < 0.05$ ) between the oocytes and CCs from small and medium antral follicles. These miRNAs against canine *Cx37* and *Cx43* mRNA could play a role in regulating oocyte and CC cross-talk. Grant FONDCYT 1211285