

## **Dose Regime Effect on Porcine Primordial Follicle Survival *In Vitro*; Perspectives of Vascular Endothelial Growth Factor 165a in Culture Medium**

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Mammalian folliculogenesis is a complex process which determines the availability of viable oocyte for successful fertilization. Initiation of mammalian primordial follicle development also known as primordial follicle activation is poorly understood. Vascular endothelial growth factor 165a (VEGFA165a) is a well-known angiogenic factor which stimulate the vascular bed formation in cows with cystic ovarian lesions. Therefore, studies on VEGFA role on ovarian follicle activation are indispensable. The objective of the current study was to determine the different dose regime effect of VEGF165a on porcine primordial follicle development *in vitro*. This preliminary data was obtained from short-term (72 hours) *in vitro* culture of porcine ovarian cortical stripes under 5% CO<sub>2</sub> and 95% O<sub>2</sub> with the humidified atmospheric conditions. Out of three different dose regimes, 0.1ng/ml (10<sup>-6</sup>M) has shown highest viable follicles numbers (22.40±0.16) compared to 1ng/ml (10<sup>-5</sup> M) (22.36±0.15) and 10ng/ml (10<sup>-4</sup>M) (7.0±0.0). Dose regime 10ng/ml VEGFA165a treatment has shown the accelerated follicle degeneration (20.11±0.11). For the first time, here we reported that lower concentration of VEGFA165a provide more follicle viability in porcine tissues under short term culture conditions. All the data were analyzed using SAS 9.0 and the treatment effect was not significant among any treatment nor with the control (p>0.05). In conclusion, it was evident in this study that the lowest concentrations of VEGFA165a has increased the follicle viability while higher concentrations implicit increased follicle degeneration. Acknowledgements: This study was supported by National Science Foundation of Sri Lanka grant NSF/SCH/2015/07 and Sabaragamuwa University Research Grant, SUSL/RG/2015/06.

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