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In vitro Study on Characterization and Viability of Vero Cell Lines after Supplementation with Porcine Follicular Fluid Proteins in Culture Medium

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Abstract : The porcine follicular fluid proteins (pFF) of healthy small size ovarian follicles (1-3 mm in diameters) of Large White pig ovaries were collected by sterile technique. They were used for testing the effect on cell viability and characterization of Vero cell lines using MTT assay. Two hundred microliter of round shape Vero cell lines were culture in 96 well plates with DMEM for 24 h. After that, they were attachment to substrate and some changed into fibroblast shape and spread over the surface after culture for 48 h. Then, Vero cell lines were treated with pFF at concentration of 2, 4, 20, 40, 200, 400, 500, and 600 µg proteins/mL for 24 h. Yields of the best results were analyzed by using one-way ANOVA. MTT assay reviewed an increasing in percentage of viability of Vero cell lines indicated that at concentration of 400-600 µg proteins/mL showed higher percentage of viability (115.64 ± 6.95, 106.91 ± 5.27 and 116.73 ± 20.15) than control group. They were significantly different from the control group ($p < 0.05$) but lower than the positive control group (DMEM with 10% heat treated fetal bovine serum). Cell lines showed normal character in fibroblast elongate shape after treated with pFF except in high concentration of pFF. This result implies that pFF of small size ovarian follicle at concentration of 400-600 µg proteins/mL could be optimized concentration for using as a supplement in Vero cell line culture medium to promote cell viability instead of growth hormone from fetal bovine serum. This merit could be applied in other cell biotechnology researches. Acknowledgements: This work was funded by a grant from Silpakorn University and Faculty of Science, Silpakorn University, Thailand.

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