GROWTH DIFFERENTIATION FACTOR-9 (GDF-9) PROTEIN ADDITION POTENTIAL TO MATURATION LEVEL OF COW'S OOCYTE USING IN VITRO MATURATION PROCESS

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ABSTRACT

Growth Differentiation Factor – 9 (GDF – 9) is a growth factor superfamily of TGF - β, which is known as paracrin affecting follicular development. GDF - 9 secreted in the early development of primary follicles to the ovulatory phase. The purpose of this research is to demonstrated the potential addition of GDF - 9 on the cow's oocyte maturation in vitro with or without addition of LH. Object of this research to proved the truth of hypotheses cow oocyte quality, after supplemented with GDF - 9 in culture medium in vitro maturation. Oocytes was collected by aspiration technique and categorized into 2 groups, size less than 5mm and more than 5mm. Further maturation of oocytes used TCM – 199 medium which have supplemented by BSA 3% and gentamycin sulfat 50 µg, later then enhanced with the addition of FSH 1 µg/ml, LH 1 µg/ml as a control and addition of FSH 1 µg/ml, GDF-9 5 µg/ml as treatment. Both oocytes maturation incubated in 5% CO2 at temperature of $38,5^0$ C for 22 hours. Mature oocytes were dyed using 1% aceto orcein and examined with inverted microscope to distinguish developmental stage of GV, GVBD, MI, MII. The result of this research showed that suplementation GDF-9 at a cow's oocytes maturation medium gave same influenced toward maturation oocyte which is indicated incrase of number M II. Is shown with the result of research which do not differ between treatment (P1) with control (P0), with assumption of $p<0,05$.

Key Words : GDF-9, Metafase I, Metafase II, Oosit maturation, LH.