

## RINGKASAN

**Nunung Aji Wibowo.** Suplementasi GDF-9 (*Growth Differentiation Factor – 9*) pada media kultur *in vitro* oosit sapi. Penelitian ini bertujuan untuk mengetahui pengaruh dari pemberian protein GDF-9 terhadap tingkat kematangan oosit sapi pada media maturasi oosit *in vitro*.

Oosit diambil dari folikel berukuran diameter permukaan 3 – 5 mm menggunakan teknis aspirasi dengan spuit 15 cc dan jarum berukuran 18 G. Pengambilan ovarium dari RPH dilakukan sebanyak tiga kali. Pada medium perlakuan oosit dimaturasi menggunakan medium yang disuplementasi 1 $\mu$ g/ml FSH, 1 $\mu$ g/ml LH, 5 ng/ml GDF-9, sedangkan pada medium kontrol tidak disuplementasi GDF-9. Maturasi dilakukan selama 22 jam di dalam inkubator CO<sub>2</sub>. Setelah mengalami maturasi oosit direndam ke dalam larutan fiksatif selama 24 jam kemudian diwarnai dengan pewarna *aceto orcein* 1% untuk mengetahui perubahan yang terjadi pada inti oosit.

Perubahan yang diamati adalah pembentukan M II pada oosit setelah dilakukan pewarnaan. Analisis data yang digunakan adalah uji T (*T- Test*).

Hasil penelitian menunjukkan adanya perbedaan yang nyata pada perlakuan ( $p \leq 0,05$ ) terhadap pembentukan M II. Berdasarkan hasil yang didapatkan maka dapat disimpulkan bahwa suplementasi GDF-9 pada media maturasi *in vitro* oosit sapi dapat memberikan pengaruh terhadap tingkat kematangan oosit.

**SUPPLEMENTATION GDF-9 (*GROWTH DIFFERENTIATION FACTOR-9*)  
AT CULTURE MEDIUM *IN VITRO* OF BOVINE'S OOCYTE**

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**ABSTRACT**

Growth Differentiation Factor - 9 (GDF-9) was a member of the TGF- $\beta$  superfamily known to regulated ovarian functions in mammals. The aim this research was to find out the influenced supplementation GDF-9 toward maturation degree of bovine's oocyte *in vitro*. At the *in vivo* GDF-9 was convinced as factor influence growth and differentiation follicle because of high increased level at mamal's reproduction activity had increased too. The objective of the current study was to test the hypothesis influence supplementation GDF-9 protein at the oocyte's maturation medium *in vitro* toward degree's maturation bovine's oocytes. Oocytes were collected with aspiration technique for the follicles wich have 3 – 5 mm diameters. Furthermore oocytes were matured within TCM 199 medium in wich additional amount 3% BSA, 50  $\mu\text{g}$  / ml gentamycin sulfat, 1 $\mu\text{g}$ /ml FSH, 1 $\mu\text{g}$ /ml LH, 5 ng GDF-9, then oocytes cultured during 22 hours at 38,5° C temperature in the incubator with 5% CO<sub>2</sub>. After 22 hours incubated later doing investigation oocyte maturation with 1 % aceto orcein dye for observing figure M II. The result showed that Supplementation GDF-9 at a maturation medium gave influenced toward maturation oocyte which is indicated increase of number M II and showed significant different.

**Key words** : Bovine's oocyte, GDF-9 protein, metaphase II