

## **PENGARUH PENAMBAHAN SELENIUM PADA MEDIA KULTUR TERHADAP TINGKAT MATURASI OOSIT *IN VITRO* KAMBING BLIGON**

**RONA AGUSTINA  
21/481174/PT/09027**

### **INTISARI**

Penelitian ini dilakukan untuk mengetahui pengaruh penambahan selenium pada media kultur terhadap tingkat maturasi oosit *in vitro* pada oosit kambing Bligon. Penelitian ini dilakukan di Laboratorium Fisiologi dan Reproduksi Ternak Fakultas Peternakan Universitas Gadjah Mada. Ovarium kambing Bligon yang digunakan diperoleh dari Rumah Potong Hewan (RPH) di sekitar wilayah Yogyakarta. Ovarium dimasukkan ke dalam termos yang berisi larutan NaCl fisiologis bersuhu 31 – 34°C dan dibawa ke laboratorium. Koleksi oosit dilakukan dengan cara aspirasi pada folikel berdiameter 3 – 7 mm menggunakan *syringe* yang telah diisi dengan *flushing medium*. Oosit dengan *grade A* dan *B* dicuci menggunakan medium *flushing* sebanyak 3 kali dan dipindahkan ke dalam 50 µL medium maturasi yang berbeda, yaitu *tissue culture medium* tanpa suplementasi dan *tissue culture medium* + selenium (Se) 2 µL, ditutup dengan *mineral oil* dan diinkubasi pada inkubator dengan 5% CO<sub>2</sub>, suhu 38°C, kelembaban udara 95%, selama 24 jam. Variabel yang diamati meliputi angka dan kualitas maturasi oosit. Maturasi oosit ditentukan berdasarkan ekspansi sel kumulus yang mengelilingi oosit. Data angka maturasi dianalisis dengan metode *independent sample t-test*, kualitas maturasi oosit dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa suplementasi Se berpengaruh nyata pada tingkat maturasi oosit *in vitro* ( $P < 0,05$ ). Presentase oosit *mature* untuk kelompok tanpa suplementasi dan suplementasi Se 2 µL berturut-turut adalah  $69,61 \pm 10,99\%$  dan  $84,30 \pm 9,18\%$ . Suplementasi Se 2 µL pada medium kultur maturasi menghasilkan kualitas yang lebih baik. Kesimpulan penelitian ini adalah suplementasi Se 2 µL dalam media kultur *in vitro* menghasilkan tingkat maturasi oosit lebih baik dibandingkan tanpa dilakukan suplementasi.

Kata kunci: Ekspansi sel kumulus, Maturasi *in vitro*, Oosit kambing Bligon, Selenium

## **THE EFFECT OF SELENIUM SUPPLEMENTATION INTO CULTURE MEDIUM OF BLIGON GOAT *IN VITRO* OOCYTES MATURATION**

**RONA AGUSTINA**  
**21/481174/PT/09027**

### **ABSTRACT**

The study was carried out to investigate the effect of selenium supplementation into culture medium on the *in vitro* oocyte maturation on Bligon goat oocytes. This study was conducted at the Animal Science Physiology and Reproduction Laboratory, Gadjah Mada University. The Bligon goat ovaries used in this study were obtained from slaughterhouses (RPH) located in the Yogyakarta area. The ovaries were placed in a thermos containing physiological NaCl solution at a temperature of 31 – 34 °C and transported to the laboratory. The oocyte was collected by aspiration on follicle with the diameter of 3 – 7 mm using syringe filled with flushing medium. Grade A and grade B oocytes were washed three times with flushing medium and transferred into 50 µL of different maturation medium, namely tissue culture medium without supplementation and supplementation (tissue culture medium + selenium (Se) 2 µL). Next, they were covered with mineral oil and incubated at a temperature of 38°C, with 95% air humidity, and 5% CO<sub>2</sub> concentration for 24 hours. The variables observed were the number and maturation oocytes quality. The *mature* oocytes were marker with the cumulus cell expansion and the existence of obvious pellucida zone that surrounds the oocyte. Maturation data were analyzed statistically using an independent sample t-test method oocyte maturation quality was analyzed descriptively. The result showed that addition of Selenium 2 µL significantly affected *in vitro* maturation in oocyte maturation ( $P < 0.05$ ). The percentages of *mature* oocyte from without supplementation and supplementation of 2 µL Se were  $69.61 \pm 10.99\%$  and  $84.30 \pm 9.18\%$ . Supplementation of Se 2 µL in the maturation culture medium resulted in better quality. It can be concluded that the supplementation of 2 µL selenium in the *in vitro* maturation medium resulted in a higher number of matured oocytes compared to the medium without selenium supplementation.

Kata kunci: Cumulus cell expansion, In vitro maturation, Bligon goat Oocytes, Selenium