

PENGARUH SUPLEMENTASI HORMON GONADOTROPIN DALAM MEDIUM TERHADAP MATURASI OOSIT *IN VITRO* KAMBING BLIGON

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INTISARI

Penelitian ini dilakukan untuk mengetahui pengaruh suplementasi hormon gonadotropin dalam medium terhadap maturasi oosit *in vitro* kambing Bligon. Penelitian ini dilakukan di Laboratorium Fisiologi dan Reproduksi Ternak Fakultas Peternakan Universitas Gadjah Mada Yogyakarta dengan menggunakan ovarium kambing Bligon yang diperoleh dari rumah porong hewan (RPH) sekitar Yogyakarta. Ovarium dibawa dari RPH menggunakan larutan NaCl fisiologis ber suhu 35-40°C. Ovarium selanjutnya dilakukan aspirasi menggunakan *syringe* berisi *flushing medium*. Oosit *grade A* dan *B* yang diperoleh dilakukan pencucian 3 kali dengan *flushing medium* dan didistribusikan ke dalam 50 µl medium maturasi yang berbeda, yaitu *tissue culture medium* tanpa suplementasi dan *tissue culture medium* + 50 IU hormon gonadotropin. *Tissue culture dish* selanjutnya ditutup dengan *mineral oil* dan diinkubasi dalam inkubator pada suhu 39°C, kelembaban udara 95%, dan kadar CO₂ 5% selama 22-24 jam. Maturasi oosit diukur berdasarkan ekspansi sel kumulus. Data angka maturasi dianalisa statistik menggunakan analisa *Independent Sample T-test* dengan SPSS 30, kualitas maturasi oosit dianalisa secara kualitatif. Hasil penelitian menunjukkan bahwa penambahan hormon gonadotropin berpengaruh nyata terhadap tingkat maturasi oosit *in vitro* ($P < 0,05$). Persentase maturasi oosit pada medium tanpa penambahan hormon gonadotropin dan penambahan 50 IU masing-masing adalah $50,67 \pm 11,37\%$ dan $79,89 \pm 10,15\%$. Disimpulkan bahwa suplementasi hormon gonadotropin 50 IU menghasilkan kuantitas dan kualitas *mature* oosit kambing Bligon lebih baik dibandingkan dengan *culture medium* tanpa suplementasi.

Kata kunci: Hormon gonadotropin, Medium maturasi, Oosit kambing Bligon, Maturasi oosit *in vitro*, Ekspansi sel kumulus

**THE INFLUENCE OF GONADOTROPIN HORMONE
SUPPLEMENTATION INTO MEDIUM OF BLIGON GOAT IN VITRO
OOCYTES MATURATION**

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ABSTRACT

This research was conducted to determine the effect of gonadotropin hormone supplementation on maturation medium on the in vitro oocyte maturation of Bligon goat. This research was conducted at the Physiology and Animal Reproduction Laboratory, Faculty of Animal Science, Gadjah Mada University, Yogyakarta, using Bligon goat ovaries obtained from slaughterhouses around Yogyakarta. The ovaries were transported from the slaughterhouses using physiological NaCl solution at a temperature of 35-40°C. The ovaries aspirated using a syringe filled with flushing medium. The recovered Grade A and B oocytes were washed three times in flushing medium and were then transferred into 50 µl of different maturation media; tissue culture medium without and with 50 IU gonadotropin hormone supplementation. Finally, the culture dishes were overlaid with mineral oil and further incubated at 39°C with 95% humidity and 5% CO₂ for 22–24 hours. Oocyte maturation was determined by cumulus cell expansion. Data for the maturation rates were analyzed by the Independent Sample T-test with SPSS 30, and oocyte maturation quality was measured qualitatively. The addition of gonadotropin hormone showed a significant difference in the process of in vitro maturation of oocytes ($P < 0.05$). The percentage of oocyte maturation in the absence and presence of 50 IU gonadotropin hormone was $50.67 \pm 11.37\%$ and $79.89 \pm 10.15\%$, respectively. In the end, gonadotropin hormone supplementation of 50 IU in the culture medium significantly improved the quantity and quality of mature Bligon goat oocytes compared to unsupplemented medium.

Keywords: Gonadotropin hormone, In vitro oocyte maturation, Cumulus cell expansion, Bligon goats, Supplementation