

SUPLEMENTASI CAIRAN FOLIKEL DALAM MEDIA MATURASI *IN VITRO* OOSIT KAMBING BLIGON

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INTISARI

Penelitian ini dilakukan untuk mengetahui pengaruh suplementasi cairan folikel ovarium kambing pada medium maturasi oosit *in vitro* terhadap maturasi oosit 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 potong hewan (RPH) sekitar Yogyakarta. Ovarium dibawa dari RPH menggunakan larutan NaCl fisiologis bersuhu 31-34°C. Koleksi oosit dilakukan melalui aspirasi menggunakan *syringe* yang diisi dengan *flushing medium*. Oosit dengan *grade A* dan *B* dicuci 3 kali dengan *flushing medium* dan di distribusikan ke dalam 50 µl medium maturasi yang berbeda, yaitu *tissue culture medium* tanpa suplementasi cairan folikel, *tissue culture medium* + 10% cairan folikel (CF), *tissue culture medium* + 20% cairan folikel. Selanjutnya ditutup dengan minyak mineral dan diinkubasi dalam inkubator pada suhu 38°C kelembaban udara 95% dan kadar 5% CO₂ selama 24 jam. Variabel yang diamati adalah angka dan kualitas maturasi oosit. Maturasi oosit diukur berdasarkan ekspansi sel kumulus. Data angka maturasi dianalisis statistik dengan menggunakan analisis variansi pola searah menggunakan SPSS 25, kualitas maturasi oosit dianalisis secara kualitatif. Hasil penelitian menunjukkan bahwa penambahan cairan folikel berpengaruh nyata pada maturasi oosit *in vitro* ($P < 0,05$), Presentase maturasi oosit pada medium tanpa penambahan cairan folikel, penambahan 10% dan penambahan 20% masing-masing adalah $52,92 \pm 15,63\%$, $66,65 \pm 13,55\%$, $86,63 \pm 13,41\%$. Disimpulkan bahwa suplementasi 20% cairan folikel menghasilkan kuantitas dan kualitas *mature* oosit kambing Bligon lebih baik dibandingkan dengan *culture medium* dengan 10% suplementasi maupun tanpa suplementasi.

Kata kunci : Cairan folikel, Maturasi oosit *in vitro*, Kambing Bligon, Suplementasi

FOLLICULAR FLUID SUPPLEMENTATION INTO IN VITRO MATURATION MEDIUM OF BLIGON GOAT OOCYTES

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ABSTRACT

This research was conducted to determine the effect of ovarian follicular fluid supplementation on in vitro oocyte maturation medium on the maturation of Bligon goat oocytes. This research was conducted at the Physiology and Animal Reproduction Laboratory, Faculty of Animal Husbandry, Universitas Gadjah Mada, Yogyakarta, using Bligon goat ovaries obtained from slaughterhouses around Yogyakarta. The ovaries were transported from the slaughterhouse using physiological NaCl solution at a temperature of 31-34°C. Oocyte collection was performed by aspiration using a syringe filled with flushing medium. Grade A and B oocytes were washed three times with flushing medium and distributed into 50 µl of different maturation media, namely tissue culture medium without follicular fluid supplementation, tissue culture medium + 10% follicular fluid (FF), tissue culture medium + 20% follicular fluid. Next, they were covered with mineral oil and incubated in an incubator at a temperature of 38°C, 95% air humidity, and 5% CO₂ concentration for 24 hours. The variables observed were the number and quality of oocyte maturation. Oocyte maturation was measured based on cumulus cell expansion. Maturation data were analyzed statistically using a one-way analysis of variance with SPSS 25, while oocyte maturation quality was analyzed qualitatively. The results showed that the addition of follicular fluid significantly affected in vitro oocyte maturation ($P < 0.05$). The percentage of oocyte maturation in medium without follicular fluid addition, with 10% addition, and with 20% addition were $52.92 \pm 15.63\%$, $66.65 \pm 13.55\%$, and $86.63 \pm 13.41\%$, respectively. It can be concluded that supplementation of 20% follicular fluid resulted better quantity and quality of mature Bligon goat oocytes compared to medium with 10% supplementation or without supplementation.

Keywords: Follicular fluid, In vitro oocyte maturation, Bligon goat, Supplementation