

**PENGARUH UKURAN FOLIKEL TERHADAP KUALITAS  
MATURASI OOSIT *IN VITRO* KAMBING BLIGON**

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**INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh ukuran folikel terhadap kualitas 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 potong hewan (RPH) sekitar Yogyakarta. Folikel diseleksi dan dibagi dalam 2 kelompok yakni a). ukuran kecil (diameter 2 sampai 4,5 mm) dan b). ukuran besar (diameter 4,51 sampai 7 mm). Koleksi oosit dilakukan dengan cara aspirasi menggunakan *syringe* yang telah diisi dengan *flushing medium*. Oosit didistribusikan sesuai dengan asal ukuran folikelnya, dicuci dengan *washing medium* sebanyak 3 kali. Selanjutnya, oosit dikultur dalam *tissue culture medium* (TCM) dan diinkubasikan pada inkubator bersuhu 38°C sampai 39°C, kelembaban 98%, dan kadar CO<sub>2</sub> 5% selama 24 jam untuk proses maturasi *in vitro*. Variabel yang diamati adalah angka dan kualitas maturasi oosit. Maturasi oosit diukur berdasarkan ekspansi sel kumulus. Data angka dianalisis statistik dengan menggunakan *Independent Sample T-test*, kualitas maturasi dianalisis secara kualitatif. Ukuran folikel memiliki pengaruh nyata ( $p < 0,05$ ) terhadap kualitas maturasi oosit *in vitro*. Persentase oosit *mature* yang diperoleh dari folikel ukuran besar dan ukuran kecil adalah  $72,48 \pm 17,85\%$  dan  $55,56 \pm 21,34\%$ . Kualitas oosit maturasi *in vitro* menunjukkan *grade A* pada folikel besar ditandai dengan ekspansi lapisan sel kumulus yang lebih tersebar. Disimpulkan bahwa ukuran folikel berpengaruh terhadap maturasi oosit secara *in vitro*. Ukuran folikel besar menghasilkan tingkat maturasi lebih tinggi.

Kata kunci: Ekspansi sel kumulus, Maturasi oosit *in vitro*, Ukuran folikel

## **THE INFLUENCE OF FOLLICLE SIZE OF BLIGON GOATS ON THE QUALITY OF *IN VITRO* MATURATION**

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### **ABSTRACT**

This research examined the influence of follicle size to quality of oocyte maturation in vitro of Bligon goats. The research was conducted at the Animal Science Physiology and Reproduction Laboratory, Gadjah Mada University. Bligon ovaries from slaughterhouse were used in this research. Follicles were selected and divided into 2 groups: a). small follicle (2.00 mm-4.50 mm) and b). large follicle (4.51-7.00 mm). Oocytes were collected by aspiration using *flushing medium* in a syringe. Oocytes were distributed according to their follicle size, washed with *flushing medium* three times. Oocytes were cultured in the tissue culture dish and incubated in an incubator with 38 until 39 degrees, humidity 98%, CO<sub>2</sub> 5% for 24 hours. The variables observed were the number and quality of oocyte maturation. Oocytes maturation were measured through the cumulus cells expansion. Data were analyzed using an *independent sample t-test*, quality of maturation were analyzed descriptively. Result of the research showed follicle size had a significant effect ( $p < 0.05$ ) on the quality of in vitro maturation. The percentages of matured oocytes from 2 groups (large size and small size follicle) were  $72.48 \pm 17.85\%$  and  $55.56 \pm 21.34\%$ . The quality of *in vitro* maturation showed *grade A* in large follicle was marked by the scattered cumulus cells expansion. In conclusion, follicle size had significant effect on the quality of in vitro maturation. A large follicle size had greater maturation.

Keywords: Cell cumulus expansion, *In vitro* maturation, Follicle size