

## Pengaruh penambahan antioksidan glutathione pada medium slow freezing terhadap kualitas oosit domba Garut (*ovis aries*) = Effect addition of antioxidant glutathione in medium slow freezing on quality Garut sheep (*ovis aries*) oocytes

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### Abstrak

Telah dilakukan penelitian tentang penambahan antioksidan glutathione ke dalam medium pembekuan lambat terhadap kualitas oosit domba garut (*Ovis aries*) pascakriopreservasi. Tujuan dari penelitian ini adalah untuk mengevaluasi pengaruh penambahan antioksidan glutathione dalam media pembekuan lambat dengan konsentrasi 0,5 mM; 1 mM; 1,5 mM melawan kualitas oosit domba garut. Penelitian dilakukan di Lab. Reproduksi, Pemuliaan dan Kultur Sel Hewan LIPI, Cibinong. Kriopreservasi oosit dari 136 oosit dilakukan

menggunakan krioprotektan 10% etilen glikol dan sukrosa 0,1 M. Evaluasi oosit dilakukan setelah 7 hari penyimpanan dalam nitrogen cair (-196°C), meliputi: morfologi oosit dan viabilitas oosit menggunakan pewarna Hoechst dan propidium pewarna iodida. Berdasarkan hasil penelitian didapatkan persentase oosit normal normal pascakriopreservasi yaitu 0 mM (68,40%), 0,5 mM (66,98%), 1 mM (73,05%), dan 1,5 mM (80,58%). Persentase oosit yang layak pasca-kriopreservasi adalah 0 mM (68,40%), 0,5 mM (69,76%), 1 mM (75,55%), dan 1,5 mM (83,08%). Berdasarkan uji statistik ANOVA, didapatkan hasil bahwa tidak ada perbedaan yang signifikan antar kelompok perlakuan ( $P > 0,05$ ), namun grafik persentase menunjukkan pola yang cenderung meningkat dengan penambahan konsentrasi antioksidan glutathione. Kesimpulan penelitian berdasarkan hasil yang diperoleh yaitu penambahan antioksidan glutathione dalam media pembekuan lambat tidak berpengaruh terhadap kualitas oosit domba garut pasca-kriopreservasi.

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Research has been carried out on the addition of glutathione as an antioxidant in slow freezing medium on the quality of post-cryopreserved arrowroot sheep (*Ovis aries*) oocytes. The aim of this study was to evaluate the effect of adding the antioxidant glutathione in slow freezing medium with a concentration of 0.5 mM; 1 mM; 1.5 mM against arrowroot sheep oocyte quality. The research was conducted in the Lab. Animal Cell Reproduction, Breeding and Culture LIPI, Cibinong. Oocyte cryopreservation of 136 oocytes was performed

using cryoprotectant 10% ethylene glycol and 0.1 M sucrose. Evaluation of oocytes was carried out after 7 days of storage in liquid nitrogen (-196°C), including: oocyte morphology and oocyte viability using Hoechst stain and propidium iodide dye. Based on the results, the percentage of post-cryopreserved normal oocytes was 0 mM (68.40%), 0.5 mM (66.98%), 1 mM (73.05%), and 1.5 mM (80.58%). . The percentage of viable post-cryopreservation oocytes were 0 mM (68.40%), 0.5 mM (69.76%), 1 mM (75.55%), and 1.5 mM (83.08%). Based on the ANOVA statistical test, it was found that there was no significant difference between the treatment groups ( $P > 0.05$ ), but the percentage graph shows a pattern that tends to increased with the addition of the antioxidant glutathione concentration. The conclusion of the study based on the results obtained was that the addition of the antioxidant glutathione in the slow freezing medium had no effect on the post-cryopreservation quality of arrowroot sheep oocytes.