

Studi antioksidan alfa (α)-tokoferol terhadap maturasi dan kualitas oosit domba Garut (*ovis aries*) pascakriopreservasi metode slow freezing = Study of antioxidant alpha(α)-tocopherol towards Garut sheep (*ovis aries*) oocytes maturation and quality post-cryopreservation using slow freezing methods

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Abstrak

Penelitian mengenai potensi antioksidan alfa-tokoferol terhadap tingkat maturasi dan kualitas oosit domba garut (*Ovis aries*) pascakriopreservasi menggunakan metode slow freezing telah dilakukan. Sebanyak 138 oosit yang memiliki kualitas A dan B dimaturasi dalam medium TCM-199 dengan penambahan antioksidan alfa-tokoferol pada konsentrasi 0 mM, 100 mM, 150 mM, dan 200 mM. Oosit hasil maturasi in vitro tersebut, kemudian dikriopreservasi serta diamati tingkat maturasi dan kualitasnya. Pengamatan tingkat maturasi dilihat berdasarkan pembentukan badan polar I. Pengamatan kualitas oosit meliputi kondisi morfologi dan viabilitas menggunakan pewarna Hoechst dan propidium iodide. Hasil penelitian menunjukkan bahwa tidak ada perbedaan signifikan antarkonsentrasi secara statistik ($P > 0,05$), namun terdapat kecenderungan konsentrasi 150 mM memiliki persentase tertinggi terhadap tingkat maturasi oosit in vitro (88,57%); viabilitas (82,86%); dan kondisi morfologi (82,86%). Dengan demikian, 150 mM alfa-tokoferol merupakan konsentrasi terbaik yang mampu mempertahankan stabilitas oosit pascakriopreservasi.

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The study of the potential alpha-tocopherol antioxidants towards garut sheep (*Ovis aries*) oocyte maturation and quality post-cryopreservation using slow freezing method has been conducted. A total of 138 oocytes which have A and B qualities, were maturing in TCM-199 medium with the addition of alpha-tocopherol antioxidants at concentrations of 0 mM, 100 mM, 150 mM, and 200 mM. Oocytes from in vitro maturation are then cryopreserved and the maturity and quality was observed. Observation of oocyte maturation was seen based on the formation of the polar body I. Observation of oocytes quality includes morphological condition and viability by Hoechst and propidium iodide dyes. This experiment showed that there was no statistically significant difference between concentrations ($P > 0.05$), but there is a tendency of 150 mM have the highest percentage of oocyte in vitro maturation (88.57%); viability (82.86%); and morphological condition (82.86%). In conclusion, presence of 150 mM alpha-tocopherol was the optimal concentration that is able to maintain the oocyte membrane stability post-cryopreservation.