Pemberian maltosa pada visualisasi inti Oosit Domba Garut (Ovis aries L.) setelah maturasi dan pascakriopreservasi = Administration of maltose on the Oocyte Nucleus Visualization of Garut Sheep (Ovis aries L.) after Maturation and Post-cryopreservation

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Abstrak

Penelitian pemberian maltosa pada visualisasi inti oosit domba garut (Ovis aries L.) setelah maturasi dan pascakriopreservasi menggunakan metode pembekuan lambat telah dilakukan. Tujuan penelitian adalah mengevaluasi kemampuan maltosa dan menentukan konsentrasi maltosa optimum yang menginduksi inti oosit swollen pascamaturasi dan pascakriopreservasi. Pada penelitian ini digunakan domba garut (Ovis aries L.) sebagai hewan model. Penelitian disusun berdasarkan Rancangan Acak Lengkap yang terdiri atas dua uji coba, empat kelompok perlakuan, dan enam kali ulangan. Pada percobaan pertama, dilakukan pematangan oosit hingga tahap Metafase II serta dilakukan pengamatan dengan penambahan berbagai konsentrasi maltosa (0%, 1%, 3%, dan 5%). Kedua, oosit M-II yang diperoleh dilanjutkan ke tahap kriopreservasi dengan metode pembekuan lambat. Selanjutnya, dilakukan pencairan (thawing) serta dilakukan pengamatan dengan penambahan berbagai konsentrasi maltosa (0%, 1%, 3%, dan 5%). Parameter yang digunakan untuk maturasi oosit adalah Metafase II yang ditandai dengan pembentukan badan polar I. Viabilitas inti oosit swollen diamati dengan menggunakan pewarna Hoechst & PI. Sedangkan, inti oosit swollen yang ditandai dengan terdapat zona bening merupakan parameter yang digunakan pascamaturasi dan pascakriopreservasi. Hasil penelitian menunjukkan terdapat perbedaan nyata antarkonsentrasi secara statistik berdasarkan uji normalitas Shapiro-Wilk, uji homogenitas Levene, dan uji sidik ragam ANOVA (P 0,05) dan konsentrasi maltosa 3% menunjukkan persentase inti oosit swollen pascamaturasi yang tertinggi (66,14%) dan persentase inti oosit swollen pascakriopreservasi yang tertinggi (70,96%). Oleh karena itu, konsentrasi maltosa 3% merupakan konsentrasi optimum yang menyebabkan inti oosit swollen pascamaturasi dan pascakriopreservasi.

.....Research on maltose administration on the oocyte nuclear visualization of garut sheep (Ovis aries L.) after maturation and post-cryopreservation using the slow freezing method has been carried out. The aim of this study was to evaluate the ability of maltose and determine the optimum concentration of maltose that induces post-maturation and post-cryopreservation of swollen oocyte nuclear. In this study, garut sheep (Ovis aries L.) were used as animal models. The study was compiled based on completely randomized design consisting of two trials, four treatment groups, and six replications. In the first experiment, to ripen the oocytes in the Metaphase II stage, observations were made with the addition of various concentrations of maltose (0%, 1%, 3%, and 5%). Second, the Metaphase II oocytes obtained were continued to the cryopreservation stage with the slow freezing method. Furthermore, it was thawed and observed by adding various concentrations of maltose (0%, 1%, 3%, and 5%). The parameter used for oocyte maturation was Metaphase II which was characterized by the formation of a Polar Body I. The nuclear viability of swollen oocytes was observed using Hoechst & PI dyes. Meanwhile, swollen oocyte nuclear which is marked by the presence of a clear zone is a parameter used post-maturation and post-cryopreservation. The results showed that there were differences between concentrations statistically based on the Shapiro-Wilk normality test, the

Levene homogeneity test, and ANOVA variance test (P 0.05) and the 3% maltosa concentration showed the highest percentage of post-maturation swollen oocyte nuclear (66.14%) and the highest percentage of post-cryopreservation swollen oocyte nuclear (70.96%). Therefore, the 3% maltose concentration is the optimum concentration to cause swollen post-maturation and post-cryopreservation of oocyte nuclear.