

哺乳動物細胞在無特定病原雞蛋內存活條件之研析

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摘要

雞蛋及入孵 17 日齡前雞胚蛋被醫學認定無知覺，在歐盟無須送機構動物照顧與使用小組審議，也無需哺乳動物飼養設施和相關的道德批准和擔憂。還有雞蛋營養成分適合禽類細胞及雞胚生長，本研究嘗試利用無特定病原雞蛋開發培養哺乳動物細胞技術。進行哺乳動物細胞在無特定病原雞蛋內之存活條件分析，發現部分哺乳動物細胞接種於 7 - 10 日齡的無特定病原雞胚蛋絨毛尿囊膜，胚蛋可存活，經放大觀察可發現異植物。並採集絨毛尿囊膜，經顯微觀察發現有細胞團塊在絨毛尿囊膜生長。利用無特定病原雞胚蛋進行哺乳動物細胞試驗技術，將可作為減少實驗成本及取代或減少哺乳動物試驗使用之參考。

The research of survival conditions of mammalian cells in specific pathogen-free chicken embryonated eggs

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Abstract

Chicken eggs and embryos that have not reached the 17th day of their development period are medically deemed to be unconscious. In the European Union, they do not require protocol approval by the Institutional Animal Care and Use Committee, nor do they need mammalian breeding facilities or ethical restrictions. In addition, the rich nutrient condition of eggs is suitable for the growth of poultry cells and chicken embryos. The purpose of this study was to develop the mammalian cell culturing technology by using specific pathogen-free (SPF) eggs. The evaluation of the survival conditions of mammalian cells *in ovo* was conducted. It was found that some mammalian cells could be implanted into the chorioallantoic membrane of SPF eggs between 7 and 10 days of incubation. The embryonic eggs could survive and the grafts were visible by magnification. After chorioallantoic membranes were collected, data showed some mammalian cells could survive on the chorioallantoic membrane of the embryonated chicken eggs by histological examination. Using of SPF chicken embryonated eggs for mammalian cell testing technology would reduce experimental costs. Further, it could be a reference for the experimental model in replacing or reducing mammals.