

Evaluation of chicken embryos survival rates of sex-limited PGCs after transplantation ⁽¹⁾

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Abstract

The objectives of this study were to evaluate embryo survival and gonadal migration rate of sex-limited PGCs after transplantation. Chicken PGCs collected from the primitive gonads of chicken embryos (5.5-day-old) were used as donor cells for transplantation into the recipient chicken embryos. Before transplantation, an EGFP reporter gene was transferred into the PGCs. Approximately 2 μ L of electroporated PGC suspension containing 150-300 cells/ μ L were injected into the dorsal aorta of the recipient chicken embryos of 3.5-day-old. The results showed that the survival rate at day 14 after incubation in embryos of TLRI native chicken transplanted with Leghorn PGCs was higher than the Leghorn embryos transplanted with TLRI PGCs (50.7% vs. 17.4%; $P < 0.05$). The expression rates of GFP gene detected in the gonads of transplanted embryos was 17.4% (18/103) and 15.5% (5/33) in TLRI native chicken and Leghorn chicken embryos examined at 14 days of incubation, respectively. Results of this study can facilitate further transgenic chicken studies in the future.

Key words : Chicken, Primordial germ cell, Sex-limited, In vivo transplantation, Embryos survival rate.

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