



Injection of mice derived Green Fluorescent Protein (GFP) in rat fetal liver and assessment of GFP DNA in rat offspring

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Objective

In utero stem cell transplantation (IUT) could become an important therapeutic approach in fetuses with congenital disorders. Xenotransplantation is a promising alternative to provide an organ supply for transplantation. The purpose of this study the determination of GFP gene in liver of rat offspring, after intra uterine injection of mesenchymal stem cells.

Methods

GFP mice bone marrow-derived mesenchymal stem cells were injected into the liver of 14day old rat fetuses with open technique and microscopic guided. Then rats were delivered at full term and GFP DNA the offspring livers was determined by PCR two weeks after birth.

Results

GFP gene was present in the rats' livers proved by specific primers of GFP expressing gene, after making sure about accuracy of performance of primers at liver of GFP mice.

Conclusion

Due to presence of GFP gene in the liver of offsprings two weeks after birth, it can be concluded that xenotransplantation of MSC done while fetal immune system is not mature, doesn't induce rejection. Using methods such as flow cytometry, the presence of the cells can be detected accurately, which can be subject of future research.