ABSTRACT

The present invention relates to primary cultured adipocytes for gene therapy, where the adipocytes stably maintain a foreign gene encoding a protein that is secreted outside of cells. This invention provides cells suitable for gene therapy, which can replace bone marrow cells and liver cells used for conventional *ex vivo* gene therapy. The present invention established methods for transferring foreign genes into primary cultured adipocytes, which are suitable for *ex vivo* gene therapy; can be easily collected and implanted; and can be removed after implantation. Specifically, the present invention established these methods that use retroviral vectors. The present invention also established primary cultured adipocytes for gene therapy, where the adipocytes stably maintain a foreign gene encoding a protein that is secreted outside of cells.