

Medical Applications and Ethical Issues of Recent Biological Research

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In this talk, I shall discuss recent advances in molecular and cell biology, such as cloning, nuclear transfer, research on stem cells and embryonic stem cells, xenotransplantation, etc. These advances offer hope in the treatment of diseases, such as Alzheimer's, Parkinson's, diabetes, heart, liver, kidney, stroke, cancer, etc., as well as provide new sources for blood substitutes and organs for human transplantation. I shall also describe work carried out in my own laboratories on the development of hemoglobin-based oxygen carriers as blood substitutes and on the development of a new non-invasive methodology to detect graft rejection after solid organ transplantation in rodent models. Advances in molecular and cell biology and their applications to medicine raise serious ethical issues in our society. This discussion offers a forum to consider some of these issues.