

## Gene therapy for male infertility

For the first time, male infertility has been cured with gene therapy. The breakthrough was obtained in mice, and will lead to development of therapy in men. Scientists at Kyoto University, Japan, have successfully corrected a defective gene in Sertoli cells – specialized cells that line ducts in the testes and help sperm to mature. They nourish immature germ cells and produce chemical cues that tell them to divide.

The mice were genetically engineered to have a defective version of a gene called Steel. When working properly, this gene produces a protein that enables Sertoli cells to swap messages with germ cells. Adenovirus – a group of viruses that cause respiratory diseases in humans – was used as vector to transfer a correct version of Steel into the mice. The virus vanished after delivering the correct gene, raising hopes that it would not cause any immunological or genetic side effects if used in men. Although the treated infertile males did not produce enough sperm to mate naturally, the investigators fertilized female mice through IVF after extracting semi-matured sperm from the testes of the males. These females gave birth to 13 females and seven healthy, fertile males. The study has shed more light on the interaction of Sertoli cells and sperm. (BSS Newsletter, February 2002)