Animal Biotechnology - Technologies, Markets and Companies

Description:

This report describes and evaluates animal biotechnology and its application in veterinary medicine and pharmaceuticals as well as improvement in food production. Knowledge of animal genetics is important in the application of biotechnology to manage genetic disorders and improve animal breeding. Genomics, proteomics and bioinformatics are also being applied to animal biotechnology.

Transgenic technologies are used for improving milk production and the meat in farm animals as well as for creating models of human diseases. Transgenic animals are used for the production of proteins for human medical use. Biotechnology is applied to facilitate xenotransplantation from animals to humans. Genetic engineering is done in farm animals and nuclear transfer technology has become an important and preferred method for cloning animals.There is discussion of in vitro meat production by culture

Biotechnology has potential applications in the management of several animal diseases such as foot-and-mouth disease, classical swine fever, avian flu and bovine spongiform encephalopathy. The most important biotechnology-based products consist of vaccines, particularly genetically engineered or DNA vaccines. Gene therapy for diseases of pet animals is a fast developing area because many of the technologies used in clinical trials humans were developed in animals and many of the diseases of cats and dogs are similar to those in humans.RNA interference technology is now being applied for research in veterinary medicine

Molecular diagnosis is assuming an important place in veterinary practice. Polymerase chain reaction and its modifications are considered to be important. Fluorescent in situ hybridization and enzyme-linked immunosorbent assays are also widely used. Newer biochip-based technologies and biosensors are also finding their way in veterinary diagnostics.

Biotechnology products are approved by the Center for Veterinary Medicine of the FDA. Regulatory issues relevant to animal biotechnology are described.

Approximately 111 companies have been identified to be involved in animal biotechnology and are profiled in the report. These are a mix of animal healthcare companies and biotechnology companies. Top companies in this area are identified and ranked. Information is given about the research activities of 11 veterinary and livestock research institutes. Important 108 collaborations in this area are shown.

Share of biotechnology-based products and services in 2012 is analyzed and the market is projected to 2022.

The text is supplemented with 34 tables and 5 figures.Selected 250 references from the literature are appended.

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Vaccines for zoonotic viral diseases

4. Molecular Diagnostics in Animals

Introduction

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