

Table of Contents

- **Section I: Human Diseases: In Vivo and In Vitro Models**

1. Drosophila: A Model for Biotechnologist
2. Animal Models of Tuberculosis
3. Animal Model for Neurodegenerative Disorders
4. Epigenetics and Animal Models: Applications in Cancer Control and Treatment
5. Development of Mouse Models for Cancer Research
6. Human Papillomavirus (HPV): Diagnosis and Treatment
7. Human DNA Tumor Viruses and Oncogenesis
8. Animal Models for Human Disease
9. HIV and Antiretroviral Drugs
10. Animal Biotechnology as a Tool to understand and Fight Aging

Section II: Animal Biotechnology: Tools and Techniques

11. MultiCellular Spheroid: 3-D tissue Culture Model for Cancer Research
12. Animal Tissue Culture: Principles and Applications
13. Concepts of Tissue Engineering
14. Nanotechnology and Its Applications to Animal Biotechnology
15. Antibodies: Monoclonal and Polyclonal
16. Molecular Markers: Tool for Genetic Analysis
17. Gene Expression: Analysis and Quantitation
18. Ribotyping: A Tool for Molecular Taxonomy
19. Next Generation Sequencing and Its Applications
20. Biomolecular Display Technology: A New Tool for Drug Discovery
21. In Silico Model: From Simple Networks to Complex Diseases

Section III: Animal Biotechnology: Applications and Concerns

22. Transgenic Animals and their Applications
23. Stem Cells: A Trek from Laboratory to Clinic to Industry
24. Role of Cytogenetic and Molecular Genetics in Human Health and Medicine
25. Antibodies and their Applications
26. Vaccines: Present Status and Applications
27. Safety Assessment of Food Derived from Genetically Modified Crops
28. Nanotechnology and Detection of Microbial Pathogens
29. Biotechnological Exploitation of Marine Animals
30. Herbal Medicine and Biotechnology for the Benefit of Human Health
31. Ethical Issues in Animal Biotechnology
32. CAM Assay
33. In vitro Fertilization
34. Human Embryonic Stem Cells
35. Biosensor
36. Animal Cloning
37. Animal Models for Enteric Diseases
38. Biosafety
39. Animal Experimentation: Issues and Non-Issues
40. Biopharming
41. Organ Transplantation
42. Enzyme inhibition assay for metabolic disorders - exploring leads from medicinal plants
43. Intellectual Property Right and Animal Biotechnology.