

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Biotechnology - NOC:Genome Editing and Engineering

Subject Co-ordinator - Prof. Utpal Bora

Co-ordinating Institute - IIT - Guwahati

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Introduction: Genes and Genome Organization
- Lecture 2 - History and Basics of Genetic Engineering
- Lecture 3 - Advantages and Limitations of Genetic Engineering
- Lecture 4 - Breakage of Genomic DNA
- Lecture 5 - Repair of Genomic DNA
- Lecture 6 - Homologous and non homologous recombination
- Lecture 7 - Site specific recombination
- Lecture 8 - Targeted genetic modification - I
- Lecture 9 - Targeted genetic modification - II
- Lecture 10 - Basics of Zinc Finger Nucleases
- Lecture 11 - Design of Zinc Finger Nucleases for genome editing
- Lecture 12 - Applications of Zinc Finger Nucleases - Part A
- Lecture 13 - Applications of Zinc Finger Nucleases - Part B
- Lecture 14 - Basics of TALEN - Part A
- Lecture 15 - Basics of TALEN - Part B
- Lecture 16 - Design of TALEN for genome editing - Part A
- Lecture 17 - Design of TALEN for genome editing - Part B
- Lecture 18 - Application of TALEN - Part A
- Lecture 19 - Application of TALEN - Part B
- Lecture 20 - CRISPR system in bacteria - Part A
- Lecture 21 - CRISPR system in bacteria - Part B
- Lecture 22 - CRISPR/Cas9 in Genome Editing - Part A
- Lecture 23 - CRISPR/Cas9 in Genome Editing - Part B
- Lecture 24 - Applications of CRISPR/Cas9 - Part A
- Lecture 25 - Applications of CRISPR/Cas9 - Part B
- Lecture 26 - Computational Resources for CRISPR / Cas - Part A
- Lecture 27 - Computational Resources for CRISPR / Cas - Part B
- Lecture 28 - Human cell engineering in diseases : Thalassemia - Part A
- Lecture 29 - Human cell engineering in diseases : Thalassemia - Part B

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- Lecture 30 - Human cell engineering in diseases : Severe combined immunodeficiency (SCID) - Part A
- Lecture 31 - Human cell engineering in diseases : Severe combined immunodeficiency (SCID) - Part B
- Lecture 32 - Human cell engineering in diseases : Hemophilia - Part A
- Lecture 33 - Human cell engineering in diseases : Hemophilia - Part B
- Lecture 34 - Animal models - Part A
- Lecture 35 - Animal models - Part B
- Lecture 36 - iPSc models - Part A
- Lecture 37 - iPSc models - Part B
- Lecture 38 - Cancer disease models - Part A
- Lecture 39 - Cancer disease models - Part B
- Lecture 40 - Engineered immune cells for Cancer therapy (I) - Part A
- Lecture 41 - Engineered immune cells for Cancer therapy (I) - Part B
- Lecture 42 - Engineered immune cells for Cancer therapy (II) - Part A
- Lecture 43 - Engineered immune cells for Cancer therapy (II) - Part B
- Lecture 44 - History and Basics - Part A
- Lecture 45 - History and Basics - Part B
- Lecture 46 - Genome editing and personalized therapy
- Lecture 47 - Bioethics and Biosafety - Part A
- Lecture 48 - Bioethics and Biosafety - Part B
- Lecture 49 - Regulatory issues in Genome Editing