

Online CRISPR-Cas Gene Editing Bootcamp: From Fundamentals to Future Applications

Rewriting the Blueprint of Life: Learn CRISPR from Concept to Application

01-04 July 2026, 8:00 PM IST

Course Structure

Day 1: Introduction to CRISPR-Cas System

- Discovery of CRISPR in prokaryotes
- CRISPR-Cas immune system in bacteria
- Evolution of gene editing technologies
- Overview of CRISPR-Cas types (Cas9, Cas12, Cas13)

Hands-On

- *NCBI resources for CRISPR-related gene/protein exploration*

Day 2: Mechanism of CRISPR-Cas Gene Editing

- Guide RNA (gRNA) design
- Cas9-mediated DNA cleavage
- DNA repair mechanisms (NHEJ vs HDR)
- Off-target effects and optimization

Hands-On

- *Design of gRNA using online tools like CHOPCHOP*

Day 3: Bioinformatics Tools for CRISPR Applications

- Overview of CRISPR bioinformatics tools
- Target prediction tools (CRISPOR) Off-
- target analysis tools
- Databases like CRISPRdb

Hands-On

- *Practical use of CRISPOR*

Day 4: Applications and Future of CRISPR

- Applications in research, agriculture, diagnostics, and therapy
- CRISPR-based COVID-19 detection kits
- Ethical considerations and regulatory issues
- Latest developments: Prime Editing, Base Editing

Other Information

Fee and Features

Indian Participants: **Rs 1000/-**

Other Participants: **USD 99**

- E-Certificate
- Lecture Recordings and PPTs
- Protocols and Tools to Participants
- Interactive and Live Sessions

Who can Join

Graduate/Postgraduate / Research scholars/
Faculty/ Industrialist in the field of Life Sciences
(ZBC, Biotech, BioChem, MicroBio etc.),
MBBS/MD/MS, Pharmacy, Chemical Sciences,
Medicine, Medical Professionals etc.

Date and Time

01-04 July 2026

India	8:00 PM
Dubai	6:30 PM
Saudi Arab	5:30 PM

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