1. Record Nr. UNINA9910743369803321

Titolo	The CRISPR/Cas Tool Kit for Genome Editing / / edited by Aftab Ahmad, Sultan Habibullah Khan, Zulqurnain Khan
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2022
ISBN	981-16-6305-X 981-16-6304-1
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (342 pages)
Collana	Biomedical and Life Sciences Series
Disciplina	576.5072
Soggetti	Biotechnology Food science Plant biotechnology Plant genetics Food Science Plant Biotechnology Plant Genetics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Chapter 1: An introduction to CRISPR/Cas based genome editing -- Chapter 2: History and classification of CRISPR/Cas systems -- Chapter 3: Bioinformatic tools -- Chapter 4: Delivery methods in CRISPR/Cas platform -- Chapter 5: Re-engineering of CRISPR/Cas system -- Chapter 6: Beyond genome editing: CRISPR approaches -- Chapter 7: RNA editing with CRISPR/Cas13 -- Chapter 8: CRISPR for rewriting genetic codes -- Chapter 9: Applications of CRISPR/Cas system in plants -- Chapter 10: Challenges and Future perspective of CRISPR Technology.
Sommario/riassunto	This book discusses CRISPR/Cas- one of the most powerful tools available to scientists for genome editing. CRISPR/Cas is not only a genome editing tool, but researchers have also engineered it for gene regulation, genome imaging, base editing and epigenome regulations. This book describes the entire toolkit for CRISPR/Cas. The opening section gives an introduction to the technique and compares it with other genome editing tools. Further section gives a historical

perspective of the tool, along with its detailed classification. The next chapters describe bioinformatic tools in CRISPR/Cas, and delivery methods for CRISPR/Cas. The book also discusses about the applications of CRISPR/Cas beyond genome editing and use of CRISPR for rewriting genetic codes. The book dedicates a section to the use of CRISPR in plants. The book culminates with a chapter on the current status, challenges and shortcomings of the CRISPR/Cas genome editing tool. The book would be highly interesting to students and researchers in molecular biology, biochemistry, biotechnology, food science, agriculture and plant sciences.