

A “CRISPR” OVERVIEW OF GENOME EDITING: POTENTIALS AND CHALLENGES

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“CRISPR” stands for Clustered Regularly Interspaced Short Palindromic Repeats, which is the characteristic of a bacterial immune system that forms the basis for the popular CRISPR-Cas9 genome editing technology. It is robust, faster, cheaper and more accurate than previous DNA editing techniques such as meganucleases, zinc finger nucleases (ZFN), and transcription activator like effector nucleases (TALEN). This technology has a wide range of potential applications ranging from basic research, agriculture, biomedicine, generating germline animal models, somatic genome engineering, functional genome screening and in treating genetic diseases. Nowadays CRISPR-Cas9 tool is the most versatile, simplest and precise method of genome editing and is therefore attracting a lot of attention in the scientific world. This review highlights evolution, classification, components and applications of CRISPR based technology as well as its future challenges.
