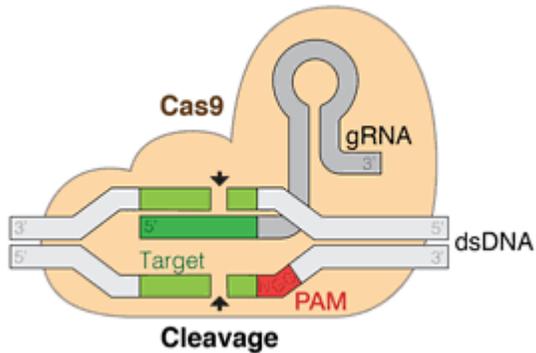




A Webinar On

“CRISPR/Cas-Enabled Plant Genome Editing & Precision Breeding”

9 am (PST) on December 18, 2020



**Organized by
Dr. A. Q. Khan Institute
of Biotechnology and Genetic
Engineering (KIBGE)
University of Karachi**

INTRODUCTION TO THE WEBINAR

The Clustered Regularly Interspaced Short Palindromic Repeats/CRISPR-associated protein system (CRISPR/Cas) has recently become the most powerful tool available for genome engineering in various organisms. With efficient and proper expression of multiple guide RNAs (gRNAs), the CRISPR/Cas system is particularly suitable for multiplex genome editing. During the past several years, different CRISPR/Cas expression strategies, such as two-component transcriptional unit, single transcriptional unit, and bidirectional promoter systems, have been developed to efficiently express gRNAs as well as Cas nucleases. Significant progress has been made to optimize gRNA production using different types of promoters and RNA processing strategies such as ribozymes, endogenous RNases, and exogenous endoribonuclease (Csy4). Besides being constitutively and ubiquitously expressed, inducible and spatiotemporal regulations of gRNA expression have been demonstrated using inducible, tissue-specific, and/or synthetic promoters for specific research purposes. Most recently, the emergence of CRISPR/Cas ribonucleoprotein delivery methods, such as engineered nanoparticles, further revolutionized transgene-free and multiplex genome editing. In this webinar, we will discuss the current strategies and future perspectives for efficient expression and engineering of gRNAs with a goal to facilitate CRISPR/Cas-based multiplex genome editing and precision breeding.

RESOURCE PERSON

Prof. Yinong Yang
Department of Plant
Pathology and
Environmental
Microbiology
Penn State University,
Pennsylvania, USA.



Areas of Expertise

- Molecular plant-microbe interactions
- Disease resistance and abiotic stress tolerance
- Functional genomics and biotechnology
- Genome editing and engineering
- Rice and mushroom precision breeding
- Gene-edited and genetically modified organisms.

REGISTRATION

All interested are welcome. The registration is free but mandatory and will be on first come first serve basis.

Intended participants are required to fill the registration form latest by 11:55 pm (PST) on Monday December 14, 2020. Register through this link:

<https://forms.gle/jxErgurehvZftNWi7>

CONTACT PERSON

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