Special Issue

Molecular Mechanisms of Plant Virus Infection, Resistance and Control

Message from the Guest Editor

Plant viruses pose a major threat to global agriculture by reducing crop yield and quality. At the molecular level, virus infection involves intricate interactions between viral components and host cellular machinery. Many plant viruses remodel intracellular membranes to establish replication complexes, often exploiting host trafficking systems and organelle interfaces. To evade antiviral responses, viruses express proteins that suppress RNA silencing. Viral movement proteins enable cell-to-cell and systemic transport by modifying plasmodesmata and coordinating with host structures. Advances in molecular virology, fluorescence microscopy, and high-resolution structural biology have significantly improved our understanding of these dynamic processes. In parallel, genome engineering tools such as CRISPR-Cas systems are being developed to target both RNA and DNA viruses. This Special Issue invites original research and review articles focused on the molecular mechanisms of plant virus infection. Topics may include replication, movement, suppression of host defenses, virus-host interactions, resistance mechanisms, and emerging biotechnological tools for virus detection and control.

Guest Editor

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Message from the Editor-in-Chief

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