Special Issue

Epigenetic Regulation in Solanaceae Crops

Message from the Guest Editor

Epigenetic mechanisms, including DNA methylation, histone modifications, and non-coding RNAs, play important roles in regulating gene expression and plant development without altering the DNA sequence. In Solanaceae crops such as tomato, pepper, potato, and eggplant, epigenetic regulation has emerged as a key layer influencing traits like organ development, fruit ripening, stress tolerance, and pathogen defence. Recent advances in chromatin accessibility profiling and functional epigenomics have enabled in-depth studies in these important crops. This Special Issue focuses on recent progress in epigenetic regulation in Solanaceae. We welcome original research articles, reviews, and methodological papers covering chromatin accessibility, transposon silencing, small RNA-mediated pathways, epigenomic responses to environmental stimuli, and the integration of epigenetic data into crop breeding. By showcasing current advances and emerging technologies such as ATAC-seq and Hi-C, this collection aims to deepen our understanding of plant epigenetics and promote its applications in Solanaceae crop improvement.

Guest Editor

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