Special Issue

Molecular Mechanisms of Flower Development and Plant Reproduction

Message from the Guest Editors

The molecular mechanisms of flower development and plant reproduction are complex and delicate processes involving the interaction of multiple genes and proteins. The gene-level regulation is central to this process, including genes that control when and how flowers develop, forming networks that coordinate flower form and function. The protein-level regulation also plays a key role, particularly transcription factors, splicing factors and signal transduction proteins, which control the expression of specific genes and transmit signals between cells and even distant parts of the plant. Additionally, environmental factors such as photoperiod, temperature and nutritional conditions affect flowering which, in many cases, occur through the production of alternatively spliced transcripts. In due course, the transition from vegetative to reproductive growth is a key stage in the plant life cycle, and it involves the conversion of the vegetative shoot apical meristem to floral meristem, which in turn leads to the development of flower organs. Compatible pollen–pistil interactions allow fertilization to occur and ultimately determine the production of fruits and seeds.

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Plants is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and commentaries on topics of interest to the plant research community.

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