**Review. Brassinosteroids: Multi-dimensional regulators of plant growth, development, and stress responses**

综述。油菜素类固醇：植物生长、发育和抗性反应的多维调节剂。

![A close up of a map

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It’s been fifty years since the existence of brassinosteroids was shown, and about thirty since the awesome power of Arabidopsis genetics started to reveal the genes involved in its synthesis, perception and signaling. Nolan et al. review the highlights of brassinosteroid research and also more recent findings, particularly new insights into how it intersects with other hormones and signals, and its contributions to stress responses. The authors discuss how manipulations of brassinosteroid biology can be applied in crops, and identify key unresolved questions. (Summary by [Mary Williams](https://community.plantae.org/user/MaryWilliams)) Plant Cell [10.1105/tpc.19.00335](http://www.plantcell.org/content/early/2019/11/27/tpc.19.00335)

自从油菜素类固醇被发现以来已有五十年了，而自三十年前，通过借助强大的拟南芥遗传学力量，人们开始揭示涉及油菜素类固醇合成、感应和信号传导相关基因。 Nolan等回顾油菜素类固醇研究的重点以及最近的发现，尤其是它如何与其他激素和信号分子相互影响，及其对植物应对压力所起的作用。 作者讨论了控制油菜素类固醇的相关反应在作物中的应用，并明确了尚未解决的关键问题。