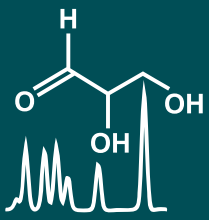

Metabolites

an Open Access Journal by MDPI

CiteScore: 6.9
Indexed in PubMed
Impact Factor: 3.7

Special Issue Reprint

Metabolomics and Plant Defence

Edited by: Shitou Xia and Junxing Lu

This Reprint compiles the peer-reviewed articles from the Special Issue "Metabolomics and Plant Defence" of *Metabolites*. It presents a comprehensive investigation into the sophisticated metabolic reprogramming that underpins plant adaptation and resistance to environmental challenges. This collection delves into the dynamic metabolic responses of diverse crop species, including tomato, barley, tea, banana, and sorghum, to both biotic stresses such as fungal and bacterial pathogens and abiotic stresses such as drought, heat, and aluminum toxicity. Employing advanced metabolomic profiling and multi-omics integration, the studies within this Reprint elucidate key shifts in primary and secondary metabolism. These shifts encompass the regulation of defense phytohormones, the accumulation of protective flavonoids and phenolics, and the strategic reconfiguration of central metabolic pathways. The research within this collection highlights how plants deploy this chemical arsenal not only for immediate defense but also for priming against future stresses. This Reprint offers valuable insights for researchers in plant physiology, biochemistry, and agricultural sciences; it underscores the potential of metabolomics to identify critical metabolic traits for developing resilient crop varieties, contributing to the advancement of sustainable agriculture in the face of climate change.

https://www.mdpi.com/books/reprint/12296