1. Record Nr. UNINA9910426042103321

Autore	Abdelrahman Mostafa
Titolo	Bioactive molecules in plant defense : saponins / / Mostafa Abdelrahman, Sudisha Jogaiah
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2020] ©2020
ISBN	3-030-61149-3
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (VIII, 101 p. 15 illus., 14 illus. in color.)
Disciplina	571.9453
Soggetti	Plant defenses Plant bioactive compounds
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Production of Plant Bioactive Triterpenoid and Steroidal Saponins -- Metabolic and Functional Diversity of Saponins -- Saponins versus Plant Fungal Pathogens -- Saponin-Detoxifying Enzymes -- Isolation and Characterization of Triterpenoid and Steroidal Saponins -- Method of Estimation in Biological Sample -- Genetic Engineering of Saponin Target Genes to Improve Yields.
Sommario/riassunto	This book presents a broad perspective on saponins as important natural products with a key role in plant defense. The presence of saponins has been reported in several plant species, and many types of saponins have been found to exhibit significant antifungal activities. In addition to their role in plant defense, saponins are of increasing interest for drug research, as they are active ingredients in several traditional medicines and hold potentially valuable pharmacological properties. In this book, the authors briefly introduce readers to saponin accumulation in various plant organs, with a specific focus on their structure classification and diversity. Readers will find detailed information on the saponin structure-activity relationship and saponins' vital role in sustainable agriculture as a chemical barrier to pathogen attack. The latest techniques for isolating, identifying, and quantifying saponins are also discussed. In the closing chapter, the authors outline the recent metabolic engineering strategies applied to improve saponin glycosides production and their potential applications

in plant disease resistance. This book and the companion volume Bioactive Molecules in Plant Defense: Signaling in Growth and Stress offer vital resources for all researchers and students interested in plant pathology, mycology and sustainable agriculture.