

Progress in Biochemistry and Biotechnology

NEW HORIZONS IN NATURAL COMPOUND RESEARCH



Edited by
**Surya Nandan Meena, Vinod Nandre,
Kisan Kodam, and Ram Swaroop Meena**



About the book

Description

New Horizons in Natural Compound Research provides the latest updates in natural compound research (plant, microbes, algae, fungi) and their novel applications in health, agriculture and environment. The book gives recent advances in the extraction of natural compounds, cutting-edge approaches for natural compound purifications, and emerging trends in natural compound screening and identification. In addition, it provides a detailed explanation of the databases and libraries of natural compounds, as well as their significance. Sections focus on research and multidisciplinary practical techniques of natural product research, encouraging young scientists to pursue unique research while also generating strong research ideas.

From a future perspective, this book acts as a guide to identify potential areas and new research opportunities in the field of natural products and their service towards human beings, animals and the environment.

Key Features

- Provides a one-stop solution for concepts, cutting-edge techniques, methods, and novel applications of natural products in health and the environment
- Focuses on current gaps in natural product research, as well as methodologies and techniques to assist researchers in resolving existing challenges and speeding up the pace of drug discovery from natural sources
- Highlights new avenues of natural product research
- Contains contributions from well-experienced researchers from academia, research institutes and top-notch young scientists from industry

Details

ISBN

978-0-443-15232-0

Language

English

Published

2023

Copyright

Copyright © 2023 Elsevier Inc. All rights reserved.









Imprint

Academic Press

DOI

<https://doi.org/10.1016/C2022-0-00460-8>

Table of contents

- ☐  Full text access
Front Matter, Copyright, List of contributors, Biographies, Preface
- ☐ Book chapter  Abstract only
Chapter 1 - Natural compounds for health and environment: past, present, and future
Shreeram Suresh Jaglekar, Yogini Soman and Anup Atul Kale
Pages 1-15
[View chapter](#) > [View abstract](#) ✓
- ☐ Book chapter  Abstract only
Chapter 2 - Recent advances in extraction of natural compounds
Mahesh S. Majik and Umesh B. Gawas
Pages 17-33
[View chapter](#) > [View abstract](#) ✓
- ☐ Book chapter  Abstract only
Chapter 3 - Cutting edge approaches for natural product purification
Aiyshwaryalakshmi and Joyita Sarkar
Pages 35-45
[View chapter](#) > [View abstract](#) ✓
- ☐ Book chapter  Abstract only
Chapter 4 - Mass spectrometry-based metabolomics for high-throughput natural product screening and compound discovery: an emerging trend
Jisun H.J. Lee and Deepak M. Kasote
Pages 47-53
[View chapter](#) > [View abstract](#) ✓
- ☐ Book chapter  Abstract only
Chapter 5 - Green synthesis of natural compounds
Aafaq Tantray, Nitin Rode, ... Santosh Terdale
Pages 55-73
[View chapter](#) > [View abstract](#) ✓
- ☐ Book chapter  Abstract only
Chapter 6 - Diversity of chemical skeletons: a practical strategy to benefit
Gayatri D. Kotkar, Abhijit D. Shetgaonkar and Santosh G. Tilve
Pages 75-132
[View chapter](#) > [View abstract](#) ✓
- ☐ Book chapter  Abstract only
Chapter 7 - Modern approaches for mining of novel compounds from the microbes
Savita Girawale, Surya Nandan Meena and Kisan M. Kodam
Pages 133-146
[View chapter](#) > [View abstract](#) ✓

Actions for selected chapters

[Select all](#) / [Deselect all](#)

 [Export citations](#)



Chapter 6 - Diversity of chemical skeletons: a practical strategy to benefit

Gayatri D. Kotkar¹, Abhijit D. Shetgaonkar², Santosh G. Tilve¹

¹ School of Chemical Sciences, Goa University, Taleigao, Goa, India

² Dnyanprassarak Mandal's College and Research Center, Assagao, Mapusa, Goa, India

Available online 21 April 2023, Version of Record 21 April 2023.

[What do these dates mean?](#)

Show less

Add to Mendeley Share Cite

<https://doi.org/10.1016/B978-0-443-15232-0.00023-0>

[Get rights and content](#)

Abstract

Since ancient times, human civilization has grappled with diseases. The remedies employed were animal products, inorganic materials, and herbs.

[Access through another organization](#)

Goa University does not subscribe to this content on ScienceDirect.

From the advent of knowledge regarding the active sites of a protein for a particular ailment, the structure of the phytochemical became relevant. Plants produce thousands of chemicals, very few of which are commercialized as drugs. The first step in the search for an active component is to test the biological activity of the plant extract. The bio-guided fractionation approach is critical to future success. The development of high throughput screening (HTS) helped to simultaneously test multiple extracts or compounds. The high demand for chemicals from pharma companies led to the development of combinatorial synthesis. Huge libraries of compounds prepared by combinatorial synthesis are now available. In this chapter, we presented a picture of the structural diversity of chemicals found in nature, as well as their modifications and known applications. This should assist readers in choosing chemical skeletons when designing in silico medicines.