

Antibacterial and Antifungal Terpenes from the Medicinal Angiosperms of Asia and the Pacific: Haystacks and Gold Needles

ABSTRACT

This review identifies terpenes isolated from the medicinal Angiosperms of Asia and the Pacific with antibacterial and/or antifungal activities and analyses their distribution, molecular mass, solubility, and modes of action. All data in this review were compiled from Google Scholar, PubMed, Science Direct, Web of Science, ChemSpider, PubChem, and library searches from 1968 to 2022. About 300 antibacterial and/or antifungal terpenes were identified during this period. Terpenes with a MIC \leq 2 μ g/mL are mostly amphiphilic and active against Gram-positive bacteria, with a molecular mass ranging from about 150 to 550 g/mol, and a polar surface area around 20 Å². Carvacrol, celastrol, cuminol, dysoxyhainic acid I, ent-1 β ,14 β -diacetoxy-7 α -hydroxykaur-16-en-15-one, ergosterol-5,8-endoperoxide, geranylgeraniol, gossypol, 16 α -hydroxy-cleroda-3,13 (14)Z-diene-15,16-olide, 7-hydroxycadalene, 17-hydroxyjolkinolide B, (20R)-3 β -hydroxy-24,25,26,27-tetranor-5 α cycloartan-23,21-olide, mansonone F, (+)-6,6'-methoxygossypol, polygodial, pristimerin, terpinen-4-ol, and α -terpineol are chemical frameworks that could be candidates for the further development of lead antibacterial or antifungal drugs.