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Ethiopian medicinal plants traditionally used for the treatment of cancer, Part 2: A review on cytotoxic, antiproliferative, and antitumor phytochemicals, and future perspective

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This review provides an overview on the active phytochemical constituents of medicinal plants that are traditionally used to manage cancer in Ethiopia. A total of 119 articles published between 1968 and 2020 have been reviewed, using scientific search engines such as ScienceDirect, PubMed, and Google Scholar. Twenty-seven medicinal plant species that belong to eighteen families are documented along with their botanical sources, potential active constituents, and in vitro and in vivo activities against various cancer cells. The review is compiled and discusses the potential anticancer, antiproliferative, and cytotoxic agents based on the types of secondary metabolites, such as terpenoids, phenolic compounds, alkaloids, steroids, and lignans. Among the anticancer secondary metabolites reported in this review, only few have been isolated from plants that are originated and collected in Ethiopia, and the majority of compounds are reported from plants belonging to different areas of the world. Thus, based on the available bioactivity reports, extensive and more elaborate ethnopharmacology-based bioassay-guided studies have to be conducted on selected traditionally claimed Ethiopian anticancer plants, which inherited from a unique and diverse landscape, with the aim of opening a way forward to conduct anticancer drug discovery program.

Biography

Yonatan Alebachew has received his MSc in Pharmacognosy from Addis Ababa University, Ethiopia in 2021. He has great experience in the isolation and in vivo antimalarial evaluation of compounds from medicinal plants. His expertise includes isolating bioactive constituents from active extracts and fractions, molecular docking of compounds and other computational skills to design and optimize better leads, and preparing semisynthetic derivatives of potential leads.

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