Screening for new antitumoral and antibacterial drugs from Brazilian plant extracts

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Abstract

Natural products have provided, in the last 40 years, significant number of new drugs currently used in the management of most diseases. The discovery and introduction in the market of important compounds, like paclitaxel, the vinca alkaloids, etoposide, and many antibacterial drugs support the development of programs dedicated to drug discovery. Natural products have been rediscovered as an important tool for drug development despite advances in combinatorial chemistry, due to the complex molecular structures able to interact with mammalian cell targets. The Brazilian flora, the most diverse in the world, has become an interesting spot to prospect for new chemical leads or hits due to its species diversity and associated chemical richness. Screening programs have been established in Brazil as a strategy to identify potentially active substances. High throughput screening techniques allow the analysis of large numbers of extracts in a relatively short period of time, and can be considered one of the most efficient ways of finding new leads from natural products. An updated review of the current status of biological screening program is presented and recent results of new antitumoral and antibacterial chemical leads are discussed.

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