Extraction methods for Escherichia coli antibacterial assay

ABSTRACT

The recent increased interest in plant-based medication and dietary supplements has resulted in researchers from various fields of ethnopharmacology, botany, microbiology, and natural product chemistry scouring the planet for phytochemicals and "leads" that might be used to treat infectious diseases. However, even though about 25 to 50% of today's medications come from plants, none of them is employed as antimicrobials. Western medicine is attempting to replicate the effectiveness of traditional healers who have employed plants for a long time to prevent or treat infectious diseases. Secondary metabolites that have been shown to have antimicrobial activities in vitro include tannins, terpenoids, alkaloids, and flavonoids, which are abundant in plants. Plants comprise a complex variety of metabolites and bioactive compounds. Since extraction is the first step in obtaining herbal plant components, many factors must be considered while choosing the best extraction techniques. The correct extraction techniques employed will ensure that the maximal plant compounds are produced sufficiently for the required antibacterial assays. This review discusses several traditional and more recently developed plant extraction methods specifically used for antibacterial assay and includes an overview of the general idea, benefits, and drawbacks of common extraction techniques.