INTRODUCTION

Plants naturally produce a robust supply of novel metabolic compounds that can be used to treat a variety of human diseases. From 1981 to 2010, it is estimated that nearly 50% of all cancer drugs originated from natural products [1], many of which were derived from terrestrial plants [2]. Likewise, plants produce many antimicrobial agents, which include a wide variety of natural defense compounds, such as phenolics, terpenoids, alkaloids, polyacetylenes, lectins and polypeptides [3].

With the advent of modern antibiotic drugs mainly of bacterial, fungal and synthetic sources, many of these natural plant-derived antibiotic compounds have been left unexplored. Yet with the high number of antibiotic-resistant pathogenic microorganisms, there is a pressing need for the development of new classes of antibiotic drugs (Fig. 1).

One promising medicinal plant candidate is the fairly unexplored Argemone mexicana, commonly called the Mexican prickly poppy. A. mexicana is a stress-resistant member of the Papaveraceae family of plants that has been used since the time of the Aztecs [5] to treat a wide variety of ailments, such as: tumors, warts, skin diseases, inflammation, rheumatism, jaundice, leprosy, microbial infections, and malaria [6]. Some chemical and pharmacological aspects of A. mexicana have been identified [7], but, until the publication of this research [7], very few bioactive compounds had been identified in the plant to account for its many medicinal effects. Thus, this plant possesses great potential for the discovery of novel antibiotic and anticancer compounds, which is the nature of the work herein.

REFERENCES


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