Abstract

Prior to the accessibility of synthetic drugs, people were completely reliant on medicinal plants for prevention and treatment of diseases. The practice of the therapeutic herbs for healing diseases has been recorded in the history of all nations. The drugs were used in simple forms like formulated juices, powders, decoctions or infusions. Though the preparations described in prehistoric manuscripts were difficult to apprehend in respect of scientific parameters, some of them are reputed for their curative values. In pursuit of unlocking these “curative values,” the methanol extracts of leaves, aerial parts, fruits, and resins of 17 plants used in the Arabian Peninsula were screened for, nematicidal and antimicrobial activities.

As part of this work, one remarkable plant of the 17 plants studied in our lab, namely *Solanum incanum,* was studied further in a different way by "nanosizing of original plant materials" in an attempt to explore and find another alternative way to extensive extraction and isolation procedures. This plant after drying and powdering, has further been milled to more or less uniform particles of microscopic and nanoscopic size. These particles have been tested against model nematodes *(Steinernema feltiae*) and bacteria (*Escherichia coli*). They exhibited activity against *Steinernema feltiae*, which is comparable to the one seen for processed extracts of the same respective plant.

Dendrosicyos socotranus (Cucumber plant) was also studied as part of this work. This plant has been phytochemically screened and partitioned for identification of phytochemicals present affecting the above mentioned worms and microorganisms according to its traditional use. The fractionation process was performed and several fractions of the methanolic extract from *D.*

socotranus leaves were obtained and tested against *S. feltiae*, *Staphylococcus carnosus*, *E. coli* and *Saccharomyces cerevisiae*. The fractionation procedure was performed by solvent-solvent partitioning and thereafter the compounds were isolated by preparative TLC and characterized by using mass spectroscopic analytical tools.