BIOACTIVITIES OF TURKISH MEDICINAL PLANTS

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Natural products especially from higher plants will continue to be important components as medicinal agents, flavours, cosmetics and various other useful products. Plant derived natural products have proven to be very useful in the pharmaceutical industry and atili continue to be important as sources of lead compounds for the design and synthesis of other novel substances. Turkey is given special attention by researchers due to its richness not only for the biological diversity but the chemical diversity of the natural products that can be isolated for use in the products mentioned earlier.

Examples are many of the impact that the discovery of a biologically active substance from a plant has had on the discovery and the understanding of the mechanisms of action that have been applied in the treatment of diseases that afflict mankind such as morphine, digoxin etc. Local marketing of plant medicines is increasing in tropical rainforest countries. However it is essential that the efficacy and safety of these traditional medicines can be verified by scientific pharmacological methods. Bioassay-guided fractionation of selected plant extracts has resulted in the identification of active compounds representing a wide range of structures, including alkaloids, terpenoids, steroidal and phenolic compounds.

During our extensive studies with Turkish medicinal plants, we have isolated and characterized a large number of new natural compounds. Although Turkey is endowed with a wide variety of medicinal plants, very little effort has been made so far towards bioassay-directed isolation of biologically active substances from indigenous medicinal plants. During the past few years, we have also been engaged in the isolation and structure elucidation of compounds through a bioassay-guided fractionation procedure.

On the other hand, we are also investigating the potential of Turkish medicinal plants as a resource of new chemistry for plant and public health protection. For this purpose, we have developed a variety of screening assays to determine activity against bacterial and fungal pathogens, brine shrimp, insects and nematodes. The results of these screening tests and new bioactive alkaloids obtained from Veratrum, Buxus, Fritillaria, Symphytum and Pancreatum species and their biological activities will be presented.