MEDICINAL PLANTS IN THE FIGHT AGAINST LEISHMANIASIS

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In spite of the rapid progress in the understanding of the biology of *Leishmania*, the causative agent for leishmaniasis, treatment by chemotherapy has not been very successful in recent years. Pentavalent antimonials are still the preferred drugs, even though they are very toxic. So improved drug therapy is still desirable and rational approaches are needed to identify novel targets which can be exploited in these protozoal cells.

DNA topoisomerases are suitable targets for potential chemotherapy of antileishmanial drugs. Two types of DNA topoisomerases have been characterized in *Leishmania*. They catalyze the breaking and rejoining of either one strand (type I) or both strands (type II) of DNA molecules allowing supercoils to be removed from the circular DNAs. Inhibitors of DNA topoiso-

merases comprise a variety of structurally diverse compounds that interfere with the DNA nicking-closing activities catalyzed by the enzymes. Clinically active antitumor drugs include inhibitors of topoisomerase I and topoisomerase II. Some of these compounds e.g. camptothecin, ellipticines and etoposides also inhibit trypanosomal DNA topoisomerases. Based on these observations, isolation of compounds from natural sources and synthesis of new inhibitors of topoisomerases have been taken as main objectives to be carried out in our laboratory. We will describe some synthetic and natural compounds, inhibitory effects of these synthetic compounds indolyl quinolines and plant derived compound amarogentin, an iridoid glycoside on DNA topoisomerases *Leishmania* were investigated and the results will be discussed from.