3. OBJECTIVE

In the modern era of globalization, medicinal plants and their extracts are natural resources of compounds used for ethnomedicine and phytotherapy. They are also a source of natural products used in the development of new related compounds and drugs for conventional medicine. The increasing treatments interest herbal medicines require a comprehensive assessment of research data in this field to help focus future efforts.

There has been a never ending search to design a molecule that may be the most optimum or the best missile in the armamentorium for war against cancer. With the advent of new molecules, unveiling of newer mechanisms for cancer the battle is mostly won by cancer. The search for a magic bullet is and always will remain a wait for the treasure chest.

India in its truest sense has a sound legacy and heritage to contribute to this crusade against the cancer by applying experience of Ayurveda or by use of natural products in contemporary language.

The aim of the present investigation involves the evaluation of stem of *Ficus racemosa* Linn and leaf of *Avicennia marina* Vierh for anticancer and antifungal activities. This involves the testing of different extracts of the above mentioned plant extracts against various fungus strains for antifungal activity and against cancer cell lines for cytotoxic activity by ‘The National Committee of Clinical Laboratory Science (NCCLS)’ method, EUCAST method (European Committee for Antifungal Susceptibility Tests), MTT, XTT & SRB assay method respectively.

Most of the commonly used cytotoxic anticancer drugs were discovered through random high-throughput screening of synthetic compounds and natural products in cell-based cytotoxicity assays. *In-vitro* cytotoxicity assays have been used to rapidly evaluate the potential toxicity of large numbers of compounds, to limit animal experimentation whenever
possible, and to carry out tests with small quantities of compound. Evidence for the utility of
in-vitro cytotoxicity tests allows us to screen compound libraries to remove potentially toxic
compounds early in the drug discovery process.

In essence, screening became an effective way of reducing a prohibitively large
number of diverse chemical starting points to a few promising structures that can be explored
in more depth. The ultimate goal of the collaborative effort was to identify “lead” compounds
from among the hits.