AIMS AND OBJECTIVES
Colorectal carcinoma represents one of the main causes of mortality in most Western countries, and there is an indication of progressive rise even in Asian countries such as Japan and India, in which the disease was relatively uncommon until a few decades ago. It is the second leading cause of cancer deaths in the United States, third in India.

New and rapidly accumulating knowledge in epidemiology, risk factors, molecular genetics, early detection, chemoprevention and novel treatments has been used in dealing with these cancers. Surgical resection remains the only curative treatment and the likelihood of cure is greater if the disease is diagnosed at an earlier pathological stage. An alternative approach of reducing mortality from colorectal cancers involves the long term use of variety of oral agents. However, the drawbacks of current therapeutic interventions are well recorded and emergence of multidrug resistant tumours complicate the treatment of most cancers, including colorectal carcinomas.

Since the advent of monoclonal antibodies and synthetic protein kinase inhibitors, the importance of natural-products derived drugs rapidly declined. There is no doubt that the treatment of cancers has undergone a radical change; but differences remain between various types of tumours. For a majority of solid tumours, especially in the advanced and metastatic stage, treatment modalities remain often palliative and very insufficient. Hence, newer options need to be explored. The novel biodiversity available in medicinal plants may prove worthy provided a systematic pharmacological screening is carried out and active phytoconstituents identified.

The present study aims at screening extracts of some Indian medicinal plants for activity against colorectal adenocarcinomas. The active extract (one which shows selective toxicity on the carcinoma cells, whilst exhibiting minimal toxicity on the normal intestinal cells) will be subjected to detailed mechanistic studies (anticancer) and phytochemical analysis. Compounds which could be responsible for the activity exhibited by the extract will be isolated and subjected to spectral analysis.
The objectives of the study are:

- To screen extracts of ten plants from seven families for anticancer activity against colorectal adenocarcinomas by in vitro methods using cell lines.
- To identify extracts with selective toxicity on the cancer cells as against normal cells.
- To study the possible mechanism of action.
- To identify and isolate phytoconstituent/s from bioactive extracts/fractions by activity-guided fractionation.
- To purify and characterize some of the isolated phytoconstituent/s.