AIM AND OBJECTIVE

4.1 AIM
To scientifically evaluate the *Zanthoxylum alatum* Roxb. stem bark for its antioxidant and anticancer potential and to isolate, purify and characterize the compound(s) responsible for anticancer activity. The identified most potent compound will further subjected to apoptosis study.

4.2 OBJECTIVES
To perform various physico-chemical and pharmacognostical studies of stem bark of *Zanthoxylum alatum*.

- To perform *in vitro* cytotoxic activity and antioxidant activity of various prepared extracts of stem bark of *Zanthoxylum alatum*.
- Estimation of total phenolic content of active cytotoxic and antioxidant extracts.
- Isolation and characterization of bioactive constituent(s) from the most potent extracts and to perform its cytotoxic activity.
- Apoptosis study of most active isolated compound.