OBJECTIVE

The demand for plant derived drugs is increasing in developing countries due to their medicinal values and economic procurement. Over the past century, phytochemical and phytopharmacological sciences established the compositions, biological activities and health promoting benefits of numerous plant extracts.

Pongamia pinnata (Fam : Fabaceae) is used in Ayurveda and Unani system of medicine as anti-inflammatory, anti-plasmodial, antinociceptive, antihyperglycaemic, antidiarrhoeal, antilipidperoxidative, anti-ulcer, antihyperammonemnic and antioxidant, antibacterial. Seed extract of this plant has hypotensive effects and produce uterine contractions. Powdered seed is used in bronchitis, chronic fever, whooping cough and chronic skin diseases and painful rheumatic joints. Seed oil is used in scabies, leprosy, piles, ulcers, chronic fever, liver pain and lumbago.

It contains several phyto-constituents belonging to category flavonoids and fixed oils. Karanjin, pongamol, pongagalabrone, pongapin, pinnatin and kanjone have been isolated from seeds. Immature seeds contain a flavone derivative ‘pongol’. The leaves and stem of the plant consist of several flavones and chalcone derivatives such as Pongone, Galbone, Pongalabol, Pongagallone A and B. Isolation of methyl oleate and 3- methoxy(2’3’’:7,8) furanoflavone are reported in seed oil. Karanjin a furano flavone was evaluated for antiulcer, antihyperglycemnic and antibacterial activity

The purpose of the research work is to carry out phytochemical study on seed and leaf of Pongamia pinnata (L.) Pierre. The objective is channelized towards extraction of seeds and leaf using various solvents and further fractionating them based on their constituents and biological activity. The aim is to isolate biologically active constituents and further to carry out its bioavailability studies.

Drug bioavailability is a well known issue in pharmaceutical sector. The change in to delivery system can enable not only ease of application but also better absorption of actives. The formulative research of the active extract/constituent will comprise of the formulation of liposomes/phytosomes. This is in view, due to the presence of flavanoids which being major Constituent of Pongamia pinnata may show difficulty in absorption. This happens due to bacterial degradation of the phenol moiety of the molecule and a complex formation with
other substances present in the gastrointestinal tract thus preventing the flavanoids from being absorbed.

Thus the present study has been planned to study the phytochemical and pharmacological profile of active constituents and extract of seed and leaf extract and seed oil. The pharmacological activity of isolated active constituent and suitable formulation development will be evaluated.