2. AIM & OBJECTIVES

Much of the therapy directed at the treatment of asthma is either to provide symptomatic relief through broncho dilation or to reduce inflammation to prevent or delay airway remodelling. The current drug therapy is only symptomatic and do not limit disease progress. Additionally, the high cost, the prolonged use of many of these drugs is associated with severe adverse reactions and toxicity. Alternative treatments based on natural plant products and herbal mixtures in the form of Polyherbal formulations are becoming increasingly popular in India, US and other countries.

The recent trend in pharmaceutical research is moving away from single molecule or single target approach to combinations and multiple target approaches. There is growing evidence to show that medicinal plants contain synergistic and/or side-effects neutralizing combinations. Considering the above fact, we aimed for the synergistic action of mixture of medicinal plants in the form of Siddha formulation.

From the literature review carried out in the present study, it was found that the medicinal plants Adhatoda vasica (AV) (Leaf), Solanum xanthocarpum (SX) (Whole plant), Tylophora asthamtica (TA) (Leaf) and Ocimum tenuiflorum (OT) (Leaf) has been used in various respiratory diseases, and also they were scientifically reported for anti-asthmatic activity in different in-vivo and in-vitro models.

In addition, all the above selected four plants were found to contain flavonoids and alkaloids. It has been proven that flavonoids are important factors governing the activity of many cellular enzymes of man. The most frequently emphasized action of flavonoids is the impact on oxygen free radicals. This flavonoid has a significant effect on allergic inflammation in the bronchial tree. The beneficial effects of flavonoids are mainly in the prevention of many diseases, including asthma.

Keeping the above fact in mind the present study has been undertaken to develop the Siddha Formulation (Chooranam) of the above selected medicinal herbs and to validate traditional claims for anti-asthmatic activity and to find out of underlying mechanisms.
OBJECTIVES

- To pharmacognostically identify the selected individual plant powders, *Adhatoda vasica* (Leaf), *Solanum xanthocarpum* (Whole plant), *Tylophora asthamtica* (Leaf), *Ocimum tenuiflorum* (Leaf), for authenticaiton.

- To develop the Siddha formulation of the selected plant (Chooranam).

- To investigate the phytochemical potential of individual plant crude powders and Siddha formulation by chemical tests, HPLC, HPTLC.

- To assess the safety of the Chooranam according to OECD guidelines by animal models.

- To evaluate the Siddha formulation, for assessment of anti-asthmatic activity.

- Evaluation of formulation by standard parameters as per AYUSH guidelines.