SECTION-5

STUDY DESIGN AND OBJECTIVES
5. Study Design

The present study aimed at comparing the anti-inflammatory properties of selected medicinal plants and identifying the most effective variety or a blend of the potent varieties for their use in the management of OA related pathophysiology. We tested the effect of aqueous and alcoholic extracts of 2 species of cinnamon [Cinnamomum zeylanicum (True cinnamon/Ceylon cinnamon) and Cinnamomum cassia (Cassia, Chinese cinnamon)] and 2 species of Ocimum [Ocimum basilicum and Ocimum sanctum] (total 8 extracts) on anti-inflammatory markers (NO release and inhibition of PGE₂, LTB₄ and MMP) in RAW264.7, SW1353 and primary human chondrocytes. The best extract/blend of active varieties would be selected based on NO scavenging and inhibition of PGE₂, LTB₄ and MMP activities. The selected extract/blend would be studied for its efficacy to regulate the expression of proinflammatory cytokines (IL-1β and TNF-α), matrix metalloproteinases (MMPs) and COX enzymes. This would be followed by safety studies of the selected active extract/blend by performing sub acute toxicity assays in Wistar rats.

The study aimed at following objectives:


3. Comparing the effect of aqueous and methanolic extracts of *O. sanctum* on IL-1β induced PGE$_2$ and LTB4 levels in human chondrosarcoma (SW1353) cell line and human primary chondrocytes.

4. Evaluation of anti-inflammatory potential of combination of aqueous and methanolic extracts of *O. sanctum* (LOT001, LOT002 and LOT02) in SW1353 and human primary chondrocytes.

5. Evaluating the safety of the selected active extract/ blend by performing sub acute toxicity study in Wistar rats.