1. APPENDIX

8.1 Ethical Committee Approval Letter

THE SHIRPUR EDUCATION SOCIETY’S
R. C. PATEL INSTITUTE OF PHARMACEUTICAL
EDUCATION AND RESEARCH, SHIRPUR
INSTITUTIONAL ANIMAL ETHICAL COMMITTEE
(REGISTERED UNDER CPCSEA, INDIA, REGISTRATION NUMBER: 651/02/C/CPCSEA)

Ref. No. RCPIPPER/IAEC/09-2013-14 Date: 18/6/2013

CERTIFICATE

This is to certify that, the research proposal entitled “Anti-inflammatory Bowel Disease activity of Compounds Isolated from the seed oil of Plant Pongamia pinnata (Linn.)” was presented before the Institutional Animal Ethical Committee meeting on 4th June 2013. This study is approved by the committee under resolution number IAEC-2013-15.

Chairman
IAEC
8.2 Publications

ABSTRACT

Objective: Study was undertaken with the objective to develop simple, high yielding and economic method for the isolation as well as analysis of Karanj oil and Pongamol from Karanja oil.

Methodology: Karanja oil was subjected to extraction with methanol. Methanol extract was washed with large quantity of pet ether for removal of residual oil. Residual extract was dissolved in a sufficient quantity of methanol and kept aside for 6 hours. A white precipitate formed which was subjected to repeated crystallization to get karanj (18). Residual oil after precipitate removal was concentrated into half and extracted with diethyl acetic acid and kept aside for 48 hours. A pale yellow crystals were formed on the side wall collected it and chromatographed over the columns with benzene and ethyl acetate (95:5) to obtain pure Pongamol (17). Karanj and Pongamol was analysed by high performance liquid chromatography (HPLC).

Results: Yield of Karanj was 35.5 g (9.09 %) and pongamol was 27.2 g (6.48%) from 41 of Karanja oil. HPLC method developed for the analysis of karanj and pongamol produces results which comply with USP standards. Both compounds fail to produce a significant antibacterial effect on gram positive and negative bacteria as well as on pathogenic fungi and yeast.

Conclusion: This method for isolation is simple, economic and gives good yields of karanj & pongamol from Karanja oil and HPLC method for the analysis of karanj and pongamol is suitable for simultaneous estimation and identity.

Keywords: Karanja seed oil, Karanja, Pongamol, Pongamol, Diethylene.
KARANJIN AMELIORATE DSS INDUCED COLITIS IN C57BL/6 MICE

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Keywords:
Pongamia pinnata, Karanj, Furanoflavonoid, DSS Induced Colitis

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ABSTRACT: Background: Karanjin a furanoflavonoid from Pongamia pinnata (L.) Seeds, has gastrointestinal, anti-arthritic properties rendering it a natural drug having prophylactic and therapeutic property. But, the effect of Karanjin on colitis till not known. Objectives: To evaluate the beneficial effect of karanj in the treatment of experimental colitis. Methods: Colitis were induced in the C57BL/6 mice by oral administration of 2.5% solution of DSS in drinking water for 7 days. Karanjin (5% w/w) was administered in two different concentrations 100 and 200 mg/kg and 5-ASA (100 mg/kg) as reference for 7 consecutive days to the DSS induced colitic mice. On 8th day mice were sacrificed and degree of inflammation was assessed by Disease Activity Index (DAI), histology and biochemical estimation of myeloperoxidase (MPO), Nitric oxide (NO), malonaldehyde (MDA), Catalase (CAT), Superoxide dismutase (SOD), and reduced glutathione (GSH) level were measured. Result: Karanjin significantly and dose dependently ameliorate the macroscopic damage, histological changes such as cellular infiltration, tissue necrosis, mucosal and submucosal damage, reduce the activity of MPO. Depressed MDA and NO level and help in restoring the level of CAT, SOD and GSH to normal when compared to the experimental colitic group. Discussion: we demonstrated for the first time that karanjin proposed marked protective effect on experimental colitis through its anti-oxidation and immunomodulation which ultimately reduce the production of inflammatory mediator produced by the immune cells. Conclusion: Result of the present study indicates that karanjin has potential to cure colitis induced by administration of DSS.