

6th International Conference on

Advanced Clinical Research and Clinical Trials

September 10-11, 2018 | Zurich, Switzerland

Investigation of anti-nociceptive potential of *Cassia fistula* in rodent animal models

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Background: Nature is highly enriched in therapeutic agents and scientist screens it continuously for better therapeutic agents. Plant isolated components, currently, used in broad spectrum therapeutics to treat variety of diseases. Pain is one of the most common symptoms associated with many of illnesses and the treatments, at present time, available are opioids and NSAIDs. Medicines in clinic are efficient, however, allied to severe complications and toxicities.

Objective: Need for more safer and potent analgesic motivates scientist to work on the nociceptive targets. In this study we have tested the effect of *Cassia fistula* in rodent for its analgesic potential.

Material & Methods: Extraction was performed using simple extraction method. The yielded methanolic extract was then subjected to various analgesic tests such as acetic acid induced writhing, tail flick and tail immersion in mice or rats. Phytochemical analysis was performed for the presence of various chemical constituents in the MeCF. Phytochemical examination confirmed the presence of responsible components in the plant encourage us to hypothesize it as antinociceptive.

Results: Pain induced models based *in-vivo* testing assured approximately 12% and 22% better responses than standard diclofenac and tramadol, respectively. In the acetic acid induced writhing, tail flick and tail immersion tests MeCF at 125, 250 and 500 mg/kg significantly exhibited analgesic activity. The results were comparable to standard analgesic drugs i.e. diclofenac sodium (10 mg/kg) and tramadol (12.5 mg/kg).

Conclusion: The present finding suggests that MeCF possess effective phytochemical that is mainly responsible for its analgesic action. Further evaluation for mechanism of action is required to precisely explore its activity at molecular.

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