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## The gastroprotective property of *Centella asiatica* Linn. ethanolic leaf extract on Indomethacin-induced ulcer in male Sprague-Dawley rats

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A recent study has shown that the group pretreated with *Centella asiatica* leaf extract exhibited significant protection from ethanol-induced gastric mucosal injury in rats. No information on the effect of *Centella* leaf extract against drug-induced ulcer is currently available. The present study aimed to compare the gastroprotective property of *Centella asiatica* leaf extract and omeprazole against indomethacin-induced ulcer in Sprague-Dawley rats. The leaf extract was initially prepared by percolation of air-dried, powdered leaves in ethyl alcohol and subsequently fractionated using hexane, chloroform and ethyl acetate as solvents. High Performance Liquid Chromatography analysis showed that the ethyl acetate fraction contained the highest amount of asiaticoside, an active component associated with several pharmacological activities of *Centella*, thus, the ethyl acetate fraction was utilized in both subchronic and gastroprotective study. The organ weights manifested a slight increase but the plant extract did not manifest any toxicological side effects. The gastroprotective property of the ethyl acetate fraction at 250 and 500 mg/kg BW and Omeprazole at 20 mg/kg BW were assessed after pre-treatment with test agents for 21 days and induction of ulcers with single-dose indomethacin. The pH levels of *Centella* and Omeprazole were relatively higher compared to the control group and the lesion size of both groups were smaller and less distinctive as compared to the control group. Omeprazole had an ulcer with a shallower depth compared to the ulcers found in *Centella*. The findings showed that *Centella* leaf extract promotes gastroprotective activity as ascertained grossly and histopathologically compared to the control group.

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## Synthesis and Anti-Leishmanial activity of certain Oxabicyclo[3.3.1]nonanone and hexahydrobenzo[de]iso-chromans

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Leishmaniasis is a neglected protozoan infection most prevalent in poor population of tropical countries. It is an etiologic agent of broad infection spectrum from self-healing cutaneous leishmaniasis to a devastating and life claiming visceral leishmaniasis is most common form of the disease in India that is known as kala-azar. Search for successful vaccine against the parasite is still elusive. The main stream of treatment solely relies on chemotherapy. Available chemotherapy against leishmaniasis exhibit high toxicity and do not prevent emergence of drug resistance. We have been working on the synthesis of oxygen, nitrogen and sulfur heterocyclic chemistry and their evaluation in biological activity. In our computational screening processes for inhibitors against redox enzymes of Leishmania, we have identified a new class of compounds that inhibit trypanothione synthetase (TryS), an enzyme which catalyses the synthesis of T(SH)<sub>2</sub> and trypanothione reductase (TryR). Subsequently these compounds were tested against recombinant TryS and TryR enzymes using experimental methods. Compound 4-(4, 4, 8-trimethyl-7-oxo-3-oxabicyclo [3.3.1] non-2-yl) benzoic acid methyl ester showed the highest anti-leishmanial activity among all compounds tested. The in vivo assessment of this compound is also carried out in hamsters and the toxicity was studied using Swiss albino mice. The details will be discussed in the meeting.

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