

## **OP6. Chemical constituents, antiinflammatory and antinociceptive activities of essential oils from *Cordia millenii*, *Bougainvillea glabra* and *Phyllanthus muellerianus***

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Essential oils were obtained by hydrodistillation of air-dry leaves of *Cordia millenii* Bak. (Boraginaceae), *Bougainvillea glabra* Choisy (Nyctaginaceae) and *Phyllanthus muellerianus* (Kuntze) Exell. (Euphorbiaceae) using a Clevenger-type apparatus. The chemical constituents of the oils were analyzed by gas chromatography and gas chromatography-mass spectrometry on an HP-5MS column. The major constituents of *C. millenii* were limonene (19.9%), diallyl disulfide (18.4%),  $\beta$ -caryophyllene (16.6%) and linalool (13.4%) while (*E*)-nerolidol (31.4%), (*E*)- $\beta$ -ionone (10.3%) and linalool (10.1%) were present in *B. glabra*. Hexahydrofarnesyl acetone (11.6%), isocaryophyllene (9.8%) and limonene (9.4%) occurred in higher proportions in *P. muellerianus*. The antinociceptive properties of *C. millenii* oil were statistically not significantly different ( $p > 0.05$ ) when compared to the control for most tested concentrations except at the 120<sup>th</sup> minute ( $p < 0.05$ ) for the dose of 200 mg/kg *p.o.* This dose displayed antiinflammatory activity only at the 1<sup>st</sup> hour ( $p < 0.01$ ) while the others were statistically not significantly different ( $p > 0.05$ ) when compared to the control. The antinociceptive properties of the essential oil of *B. glabra* were statistically significantly different,  $p < 0.05$  and  $p < 0.01$  at the doses of 100 and 200 mg/kg *p.o.*, respectively, when compared to the control at the 30<sup>th</sup> minute but much more effective ( $p < 0.001$ ) at a dose of 400 mg/kg. For the 1<sup>st</sup> and 2<sup>nd</sup> hour, at the doses of 100 and 200 mg/kg ( $p < 0.001$ ), the antiinflammatory activity was statistically significantly (very low values of  $p$ ) different from the control, while at the 3<sup>rd</sup> hour, it was significant ( $p < 0.01$ ) at a dose of 300 mg/kg but there were no statistical differences observable at the 4<sup>th</sup> hour. The essential of *P. muellerianus* at 100 mg/kg *p.o.* displayed an increased antinociceptive activity with  $p < 0.01$  to  $p < 0.001$  from the 30<sup>th</sup> to the 120<sup>th</sup> minute. Moreover, the oil showed a high inhibition, with up to  $p < 0.001$ , in the case of carrageenan-induced inflammation.

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