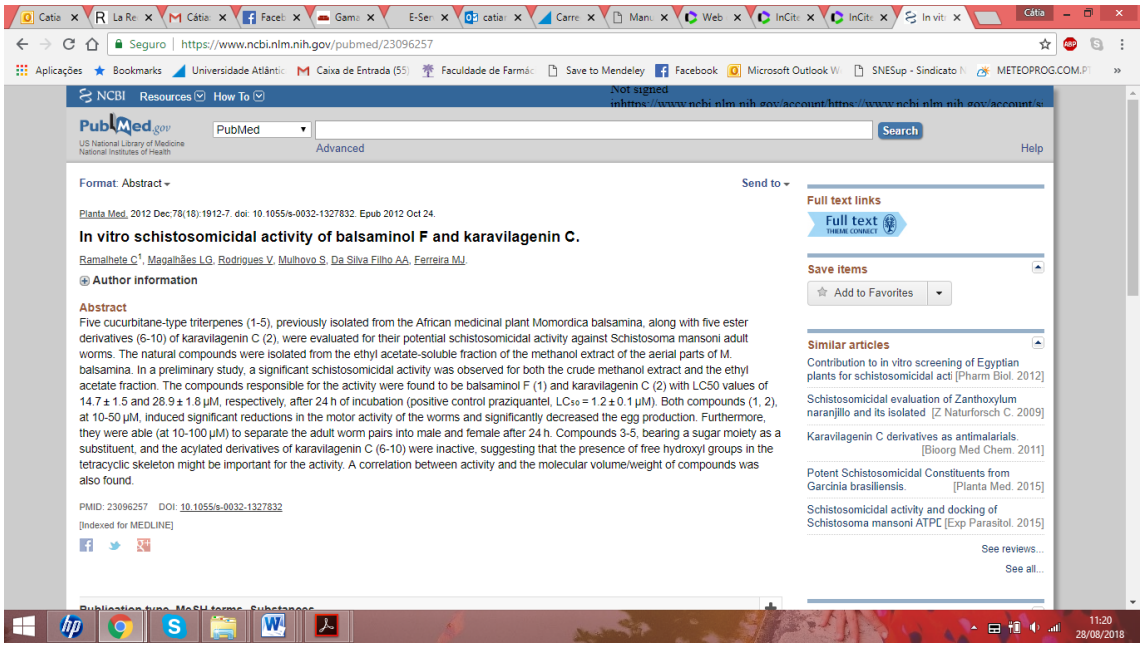
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In vitro schistosomicidal activity of balsaminol F and karavilagenin C.
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Abstract
Five cucurbitane-type triterpenes (1-5), previously isolated from the African medicinal plant Momordica balsamina, along with five ester derivatives (6-10) of karavilagenin C (2), were evaluated for their potential schistosomicidal activity against Schistosoma mansoni adult worms. The natural compounds were isolated from the ethyl acetate-soluble fraction of the methanol extract of the aerial parts of M. balsamina. In a preliminary study, a significant schistosomicidal activity was observed for both the crude methanol extract and the ethyl acetate fraction. The compounds responsible for the activity were found to be balsaminol F (1) and karavilagenin C (2) with LC50 values of 14.7 ± 1.5 and 28.9 ± 1.8 μM, respectively, after 24 h of incubation (positive control praziquantel, LC50 = 1.2 ± 0.1 μM). Both compounds (1, 2), at 10-50 μM, induced significant reductions in the motor activity of the worms and significantly decreased the egg production. Furthermore, they were able (at 10-100 μM) to separate the adult worm pairs into male and female after 24 h. Compounds 3-5, bearing a sugar moiety as a substituent, and the acylated derivatives of karavilagenin C (6-10) were inactive, suggesting that the presence of free hydroxyl groups in the tetracyclic skeleton might be important for the activity. A correlation between activity and the molecular volume/weight of compounds was also found.
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