Anti-parasitic activity of terpenoids from *Casearia sylvestris*

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Casearia sylvetris Swartz (Salicaceae) is a plant known as "guaçatonga" that has valuable pharmacological arsenal because of the presence of clerodane diterpenes known as casearins A-X and casearvestrins A-C that have been described as compounds with anticancer activity[1][2]. Besides that, the anti-parasitic effects of casearins A, B, G and J was established [2]. Leishmaniasis and Chagas disease are neglected diseases caused by the *Leishmania* protozoa and *Trypanosoma cruzi* respectively. The treatments for these diseases are based in chemotherapy drugs, that has many undesirable side effects and high toxicity [3][4]
This work describes the antileishmanial and antitrypanosomal activities of δ-cadinol and casearin L, metabolites isolated from the hexane phase of MeOH extract from the leaves *of Casearia sylvestris* by the bioguided chromatographic fractionation. The compounds were identified by RMN ^{1}H, ^{13}H and mass spectra (Figure 1).

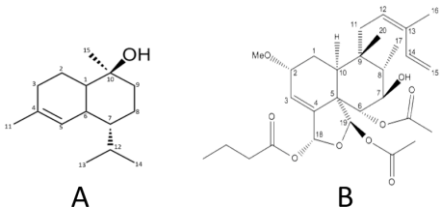

Figure 1. Structure of δ-cadinol (A) and Casearin L (B)

δ-cadinol showed IC_{50} of 9,47 ± 0,88 μg/mL against amastigotes of *L. infantum* and CC_{50} of 35,39 ± 0,04 μg/mL against mammalian fibroblasts, while casearin L showed IC_{50} of 2,73 ± 0,34 μg/mL and CC_{50} of 75,06 ± 0,58 μg/mL. Against tripomastigotes of *T. cruzi,* δ-cadinol showed IC_{50} of 5,3 ± 0,4 μM and CC_{50}>200 μM and casearin L, IC_{50} > 100 μM and CC_{50} of 22,54 ± 1,88 μM. These results demonstrated that δ-cadinol has a better activity against *T. cruzi* while casearin L against *L. infantum*, because of a higher selectivity index of >37,73 and 27,49 respectively, meaning that it needs a small concentration to kill the parasite, but a higher one to kill the healthy mammalian cells. Therefore, the compounds have a selective toxicity against these protozoans*.* Considering the search of new alternative and selective drugs with less adverse effects, these results suggest that *C. sylvestris* is a promising tool for a possible development of new anti-parasitic drugs.

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