

## ***In vitro* leishmanicidal activity of synthetic neolignans**

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Leishmaniasis is one of the most significant neglected tropical diseases. The compounds current available for the treatment of Leishmaniasis have significant side effects for patients. Therefore, the search for new leishmanicidal compounds is indispensable. Neolignans are a class of lignoids present in plants, and have attracted attention due to their parasitic activities already described. Thus, the present work aimed to explore the leishmanicidal potential of twenty synthetic dihydrobenzofuran neolignans (N1 to N20) on promastigote and amastigote forms of the *Leishmania (Leishmania) amazonensis*. Besides, their cytotoxic and hemolytic activities also were evaluated. The compounds N1, N2 and N3 were found to be the most active against promastigote forms, with IC<sub>50</sub> (Inhibition Concentration) values 17.16 µM, 4.05 µM and 9.95 µM, respectively, after 48 hours of incubation. For amastigote forms, the compounds N1, N2 and N3 showed IC<sub>50</sub> values of 3.73 µM, 6.37 µM and 5.30 µM, respectively, at the same incubation time. In addition, the compounds showed no significant hemolysis at any concentration of the evaluated. N1, N2 and N3 showed CC<sub>50</sub> values (Cytotoxic Concentration of 50% of cells) of 256.40 µM, 45.25 µM and 104.20 µM, respectively, against peritoneal macrophages at 48 hour. Besides, the selectivity index values were more than 10 µM at 48 hours. Thus, we can suggest that the compounds N1, N2 and N3 have been shown to be promising against *L. amazonensis*, and an investigation on the action mechanisms will be the next study to be performed.

**Keywords:** *Leishmania (Leishmania) amazonensis*, leishmanicidal activity, dihydrobenzofuran neolignans.

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