In vitro activity of semi-synthetic neolignan derivatives against *Leishmania infantum* intracellular amastigotes

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Leishmaniasis is a neglected tropical disease that affects around 12 million people in more than 98 countries. Visceral leishmaniasis (VL) is the most severe and fatal clinical form, mainly affecting the mononuclear phagocytic system of the spleen, liver, bone marrow and lymphoid tissues.The lack of safe and affordable clinical treatment with low toxicityhas made the research for new antileishmanials an urgent issue. In our previous studies, phenylpropanoid dimers, isolated from the plant *Nectandra leucantha* (*Lauraceae*), demonstrated antileishmanial activity. In this work, using a potent phenylpropanoid as scaffold, four new semi-synthetic derivatives (FS034, FS009, FS010 and FS050) were prepared by chemical modification and their *in vitro* antileishmanial activity and mammalian cytotoxicity were studied.The 50% effective concentration (EC_{50}) of the semi-synthetic derivatives was determined against intracellular amastigotes using light microscopy counting. The mammalian cytotoxicity was evaluated inL-929 cells and 50% cytotoxic concentration (CC_{50}) was determined by the colorimetric MTT method.Our results indicated that the four semi-synthetic derivatives presented activity against the intracellular amastigotes at a fixed concentration of 30μM,eliminating >90% of the parasites after 72 h. The compounds showed no toxicity to mammalian cells to the highest concentration of 200μM.Therefore, based in the significant activity and considerable selectivity toward the intracellular parasites, these natural compounds represent promising scaffolds for drug design studies against visceral leishmaniasis.
Support: FAPESP 2015/50075-2, 2015/23403-9, 2013/50228-8, 2015/11936-2 and CAPES.