

Natural sesquiterpene lactones are active against *Leishmania mexicana*

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In this paper, the effects of 3 natural sesquiterpene lactones, i.e., helenalin (Hln), mexicanin (Mxc), and dehydroleucodine (DhL), were evaluated using cultured *Leishmania mexicana* promastigotes. It was observed that the compounds inhibited the in vitro growth of the parasites at relatively low concentrations. The effect was rapid and irreversible with an estimated IC₅₀ of 2-4 μ M, while all the lactones were more effective than ketoconazole. Moreover, these compounds exhibited low cytotoxicity for mammalian cells. Hln induced strong vacuolization of the parasite cytoplasm, although pericellular microtubules were preserved. The 3 lactones induced DNA fragmentation as judged by the high labeling with the fluorescent TUNEL method, which was confirmed by electrophoresis on agarose gels. The ability of the parasites to invade Vero cells was also decreased by exposure to low concentrations of the compounds. We conclude that these compounds can affect the parasite's life cycle, possibly thr