Virola species have been used in traditional medicine as healing in skin infections. From V. surinamensis oil were isolated several sesquiterpene as the nerolidol which showed activity against species of Leishmania. The current study aimed to evaluate the leishmanicide activity and toxicity of extracts, fractions and surinamesin obtained from leaves of Virola surinamensis. Hexane, Ethyl Acetate, and Methanol extracts were obtained from powder of dry leaves of V. surinamensis. The hexane and ethyl acetate extracts were fractionated by silica gel column chromatography and increasingly polar gradient. The viability of L. chagasi and L. amazonensis promastigotes was assessed by tetrazolium salt assay (MTT). Peritoneal macrophages were exposed to L. amazonensis promastigotes. The treatment was performed with the extracts for 24 h. Then, the coverslips were stained and the infection index was determined. Cytotoxicity was determined in macrophage cells by peritoneal viability assay (MTT). The selectivity index was calculated as the product of cytotoxic concentration 50% and inhibitory concentration 50%. The hexane extract showed leishmanicide activity in promastigotes. The ethyl acetate, methanol extracts and fractions (C1–C6), were inactive against promastigote form of L. chagasi and L. amazonensis. None extract showed effect on L. amazonensis amastigotes. All samples tested showed low cytotoxicity (CC50 > 500 μg/mL). The selectivity index of the hexane extract was greater than 5. The hexane extract of V. surinamensis was active against L. chagasi and L. amazonensis promastigotes. The extract fractionation did not increase...