In this study, a protocol to induce high amount of friable callus of Boerhaavia paniculata RICH and a lipidomics technique were applied to investigate the profile of lipids to relate to those present in the roots of this plant that presented anti-inflammatory activity in the crude hexane extract. The callus culture was induced from seeds in solidified Murashige and Skoog medium containing different amounts of glucose and different concentrations of 2,4-Dichlorophenoxyacetic acid. The explants were kept in a germination chamber at 30±2°C with a photoperiod of 16 h under light intensity of 27 mol m⁻² s⁻¹ for 4 weeks. The best results for friable callus formation and development of the biomass were obtained in the treatment containing 2.26 M 2.4-D and glucose (1.5%; w/v). The explants were kept in a germination chamber at 30±2°C with a photoperiod of 16 h under light intensity of 27 mol m⁻² s⁻¹ for 4 weeks. The best results for friable callus formation and development of the biomass were obtained in the treatment containing 2.26 M 2.4-D and glucose (1.5%; w/v). Lipidomics techniques were applied in hexane fraction showing higher concentrations of the steroids -sitosterol (3.53 mg/100 g dw–dry cells), and fatty acids, especially 2-hydroxy-tetracosanoic acid (0.34 mg/100 g dc), eicosanoic acid (86.25 mg/100 g dc), stearic acid (420.83 mg/100 g dc), tetradecanoic acid (10.74 mg/100 g dc) and linoleic acid (100.61 mg/100 g dc). The lipid profile of callus versus that found in the roots of wild plant is described in this work.

Keywords
Anti-inflammatory lipids, Boerhaavia paniculata, callus culture, lipid profile, medicinal plant.