

Garcia EF, de Oliveira MA, Dourado LP, de Souza DG, Teixeira MM, Braga FC. (2015). In Vitro TNF- α Inhibition Elicited by Extracts from *Echinodorus grandiflorus* Leaves and Correlation with Their Phytochemical Composition. *Planta Med.* 2015 Dec 21. [Epub ahead of print].

This study aimed to evaluate the effect of various extracts and fractions obtained from *Echinodorus grandiflorus* leaves on tumor necrosis factor- α release by lipopolysaccharide-stimulated THP-1 cells, as well as to look at the association between bioactivity and phytochemical composition. To this end, a high-performance liquid chromatography with diode-array detection method was developed and validated, enabling the quantification of seven compounds in *E. grandiflorus* extracts and fractions. All of these samples showed antitumor necrosis factor- α activity, however, extracts prepared from 50% EtOH, water and dichloromethane, and a flavonoid-rich fraction elicited the most potent responses. *trans*-Aconitic acid and isoorientin were the major compounds in some preparations. Polynomial regression analysis showed the association between the contents of swertijaponin, swertisin, *trans*-aconitic, and chicoric acids with the antitumor necrosis factor- α activity of the extracts and fractions. None of the compounds tested alone abolished tumor necrosis factor- α release completely, however, some extracts and fractions reached this result, suggesting a synergistic effect between the constituents. Therefore, it is clearly shown that the species *E. grandiflorus* has significant *in vitro* antitumor necrosis factor- α activity, a promising characteristic that deserves further investigations in the search for new anti-inflammatory agents from plants.