Antioxidant properties of *Anacardium occidentale* leaf extract in LPS-stimulated macrophages.

Souza, N.C.[1]; Amarante, M.S.M.[2], Camillo, C.S.[2], Langassner, S.M.Z.[2] Jerônimo, S.M.B.[1], Dalmolin, R.J.S.[1]; Pasquali, M.A.B.[1]

[1] Instituto de Medicina Tropical do Rio Grande do Norte, Universidade Federal do Rio Grande do Norte, Natal, Brazil
[2] Departamento de Morfologia – Programa de Pós-Graduação em Biologia Estrutural e Funcional – Universidade Federal do Rio Grande do Norte - UFRN

In tropical America, principally in Northeastern Brazil, the leaf extract of *Anacardium occidentale* is traditionally used for treatment of different diseases. Anesthetic, bactericidal, and insecticidal properties of extracts and phytochemicals derivates from *Anacardium occidentale* have been reported by different authors. However, those data about chemical and biological properties and activities of *Anacardium occidentale* are poorly investigated and known. Evidences that antioxidant characteristics of plant extracts are responsible for attenuated levels of reactive oxygen species(ROS) in biological systems have been largely reported. ROS are involved in different mechanisms that participate in normal signalling pathways and processes such as inflammation. For this reason, some studies have been developed to better understand the involvement of antioxidant properties of plant extracts in modulating ROS content during inflammatory process. Here, we investigated the antioxidant effects of leaf extract from *Anacardium occidentale* in an “in vitro” model of inflammation. Redox parameters such as lipoperoxidation, protein carbonylation, and thiol content levels were evaluated in lipopolysaccharides (LPS)-stimulated macrophages (RAW 264.7) that were co-treated with different concentrations of leaf extract from *Anacardium occidentale.* We also evaluated the activities of antioxidant enzymes, catalase(CAT) and superoxide dismutase(SOD). Our results demonstrate that leaf extract at concentrations of 0.5 µg/mL and 5 µg/mL, when used as co-treatment in (LPS)-stimulated macrophages present antioxidant activities. These doses of leaf extract were able to prevent the alterations induced by LPS in protein carbonyl, lipoperoxidation and thiol content levels. Moreover, the leaf extract at same concentration blocked the effects mediated by LPS in SOD and CAT activities. Therefore, our results demonstrate that leaf extract of *Anacardium occidentale* present antioxidant effects when used in a model of inflammation. These results reveal the importance of investigate the properties of extracts used in traditional medicine. Moreover, its reinforce the importance of potential health benefits of the consumption of *Anacardium occidentale* derivates.

Financial support: CNPq.
Keywords: Anacardium occidentale, macrophage, oxidative stress.