

TAMARINDUS INDICA L. CRUDE EXTRACT INDUCES PERMEABILITY TRANSITION IN ISOLATED RAT LIVER MITOCHONDRIA

Tudella, V.G.¹; Franco, J.J.¹; Magnani, T.¹; Martins, V.P.¹; Soriani, F.M.¹;
Curti, C.²; Uyemura, S.A.¹

¹Dep. Análises Clínicas, Toxicológicas e Bromatológicas, ²Dep. Física e Química. Faculdade de Ciências Farmacêuticas de Ribeirão Preto – USP, Av. do Café, s/n, 14.040-903, Ribeirão Preto, SP.

Tamarindus indica is a natural dietary component widely consumed by humans, presenting anti-inflammatory, anti-diabetic and anti-hepatotoxic properties. We previously demonstrated that the *T. indica* extract presents also hypolipemic and antioxidant activities. Here we studied the effects of the extract on energy-linked parameters and oxidative stress-linked processes in mitochondria isolated from rat liver. In presence of 10 μM Ca^{2+} , the extract stimulated mitochondrial respiration and elicited mitochondrial swelling, allowing mitochondria to be no longer capable of sustaining the electrical membrane potential; these effects were largely inhibited by cyclosporine A. In addition, the extract stimulated H_2O_2 generation by mitochondria, as well as NADH oxidation. These results show that *T. indica* extract affects mitochondria via the mitochondrial permeability transition process, indicating a potential action as a cell apoptosis inducer agent.

Key words: *Tamarindus indica*, rat liver mitochondria, mitochondrial permeability transition.

Supported by CAPES