



INDUCTION OF QUINONE REDUCTASE BY POLYPHENOLS OF *Mangifera indica* FRUITS

Maria Eduarda de Souza Barroso¹; Elisangela Flávia Pimentel Schmitt¹; Bruno Gomes de Oliveira²; Helber Barcellos²; José Aires Ventura²; Wanderson Romão²; Tamara P. Kondratyuk³; Denise Coutinho Endringer^{1,4}.

¹Programa de Pós-Graduação em Ciências Farmacêuticas, Universidade Vila Velha, Vila Velha, Brasil
(m.eduarda.sb@live.com);

²Programa de Pós-graduação em Química, Universidade Federal do Espírito Santo, Vitória, Brasil;

³Department of Pharmaceutical Sciences, University of Hawaii at Hilo, Hilo, Hawaii, USA;

⁴Instituto Federal do Espírito Santo, Vila Velha, Brasil.

The study aimed to identify and quantify the polyphenols of fruits of *Mangifera indica* and evaluate the in vitro quinone reductase induction activity. The extraction and concentration of phenolic compounds of *M. indica* fruits was performed as described by Talcott and Talcott [1], with modifications, in four different maturation stages. The chemical composition of polyphenols was evaluated by ESI(-)-FT-ICR MS and ESI(-)-FT-ICR MS/MS. The quantification of total polyphenols was performed by colorimetric analysis using Folin Ciocalteu method [2]. The in vitro induction of quinone reductase activity was performed by colorimetric method using culture cells [3]. Altogether eight phenolic compounds were identified in deprotonated form: methyl gallate, ellagic acid, gallic acid, gallic acid glucose, methyl ester digallate, mangiferin, digallic acid, gallic acid glucose, gallic acid tetragallic acid glucose and glucose. The total polyphenols among the different maturation stage showed difference: stage 1 (green ripe, 1,125 b, µg de total polyphenols/100g pulp), stage 2 (green-yellow ripe, 2,326 ab, µg de total polyphenols/100g pulp), stage 3 (yellow ripe, 3,451 a, µg de total polyphenols/100g pulp), stage 4 (red ripe, 3,101 a, µg de total polyphenols/100g pulp). Concerning the inducing activity of quinone reductase, only the initial stage of maturation (stage 1), with a CD value (the concentration required to double the QR activity) of 2.33 ± 0.01 ng polyphenols/g fresh pulp. The IC_{50} was 0.053 ± 0.01 ng polyphenols/g fresh pulp. Therefore the chemopreventive index was 0.023. It may be concluded that polyphenols of fruits of *M. indica* have the potential of cancer chemoprevention however, further assays need to be conducted.

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