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Title: The role of pequi fruit (Caryocar brasiliense Camb) pulp oil, as a natural source of antioxidants, in experimental lung cancer

Ms. Natália Beatriz Rigoldi 5959 Colombo nacolombo2004@yahoo.com.br [1], Dr. Edwin Roger 5960 Parra erparra20003@yahoo.com.br MD [1], Prof. Dr César Koppe 5961 Grisólia grisolia@unb.com.br [2], Ms. Márcia 5969 Hage marciahage@yahoo.com.br [4], Ms. Denise Frediani 5975 Barbeiro denise@fm.usp.br [5] and Prof. Dr Vera Luíza 5991 Capelozzi vcapelozzi@lim05.usp.br MD [1]. [1] Pathology, Faculdade de Medicina da Universidade de São Paulo, Brazil, 01246903 ; [2] Genetic and Morphology, Universidade de Brasília, Brasilia, Brazil, 0123776 ; [3] Laboratory of Experimental Atmospheric Pollution, Faculdade de Medicina da Universidade de São Paulo, Brazil, 01246903 and [4] Clinical Emergency, Faculdade de Medicina da Universidade de São Paulo (FMUSP), Brazil, 01246903 .

Body: Background: Caryocar brasiliense Camb, most known as pequi, is a Brazilian fruit that has high levels of antioxidants properties. The aim of this study was to evaluate the antioxidant activity of the pequi oil. Methods: 18 male BALB/c mice was studied: 14 animals received by gavage 0,5µL/mg/day of pequi oil (Control+CBCoil = 4) during 75 days. After 15 days, 10 mices received two doses of 1,5g/kg intraperitoneal of urethane (Urethane+CBC oil=10). The other 4 animals were only submitted to the two doses of urethane (Urethane group=4). After 75 days, these groups were sacrificed. Antioxidant activity of pequi oil was evaluated in the lung tissues by the biochemical TBARS test(Thiobarbituric acid-reactive substances) and DNA damage by the comet test method. Results: The lung parenchyma from the Urethane groups without oil and with oil showed neoplasic formations induced by the chemical carcinogenesis in contrast with Control + CBC oil group.The image analysis of the comet assay showed a statistical significant decreased of the DNA damage cells in the Urethane + CBC oil group when compared with urethane group. TBARS test showed a significant decreased of the lipid peroxidation in the Urethane + CBC oil, similar as values of the Control+CBC oil, when compared with Urethane group. Conclusion: We conclude that the different natural antioxidant components found in the pequi oil are efficient to diminish the oxidative stress status and the DNA damage in chemical carcinogenesis induced by urethane experimental lung cancer, suggesting that this type of strategies may have a greater impact in lung cancer treatment. Financial Support: FAPESP, CNPq.