Antioxidant and anti-inflammatory activities of a commercial noni juice revealed by carrageenan-induced paw edema


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Abstract

This study aimed to investigate antioxidant and anti-inflammatory activities of a commercial product of noni (Morinda citrifolia) juice. Carrageenan-induced rat paw edema was employed as inflammatory model. One control and three experimental groups were formed. Experimental groups were administered noni juice alone, noni juice+carrageenan, and carrageenan alone. Oxidant and antioxidant capacity were determined by d-ROMs test and BAP test, respectively. Plasma concentrations of endothelin-1 and leptin were measured by ELISA. Measurements were performed at zero time and 2nd hour of inflammation. Oxidant capacity decreased in noni-received groups at 2nd hour (p=0.019). Antioxidant capacity of the group which received noni alone was found to be higher at 2nd hour (p=0.036). Plasma concentrations of endothelin-1 and leptin were notably lower in noni-received groups (p=0.001 and p=0.021, respectively). The results show that the commercial noni juice investigated has pronounced antioxidant and anti-inflammatory activities.

Key Words: carrageenan, noni (Morinda citrifolia), anti-inflammatory, antioxidant

Introduction

Due to bioactive compounds they contain, medicinal plants are still popular with a majority of human population to help prevent diseases and promote good health (Saminathan et al. 2013, Kannan et al. 2014, Murata et al. 2014, Krishnaiah et al. 2015). The genus Morinda (Rubiaceae) includes some 80 species native to Southeast Asia, Australia and Pacific Islands (Polynesia). The most popular species Morinda citrifolia L., commonly known as noni in the Hawaiian language, is planted in tropical and subtropical regions including Polynesia, India, Cambodia, the Caribbean region, and Central and Northern South

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