

from the matrix (referred as bioaccessibility) and transepithelial passage efficiency. In vitro digestion models are being extensively used to predict carotenoids bioaccessibility in a rapid and cheaper way, besides not involve ethical aspects as in vivo assays. The aim of this study was to assess carotenoids bioaccessibility from five available capsule-formulations of nutraceuticals in the Brazilian market, claimed as carotenoid source and with several health benefits. The nutraceuticals products were purchased in local stores in Rio de Janeiro, Brazil.

Methods: An in vitro digestion model was applied by mimicking oral, gastric and intestinal physiological conditions. Five percent (w/w) of canola oil was added to the samples. Analyses involved enzymes as α -amylase, pepsin, bile, pancreatin, lipase and inorganic salts. Physiological variations were reproduced by the bath shaker with orbital gyros (37°C) and ultracentrifugation (5000g, 45 min). Identification and quantification of carotenoids were performed by HPLC, using a 33°C column oven, PDA detector, and a C30YCM Column. Carotenoids separation was obtained by a gradient elution of methanol and methyl tert-butyl ether, using a 0.8mL/min flow rate, injection volume of 15 μ L and run time of 28min.

Results: Bioaccessibility of carotenoids was decreased after pass through the gastro-intestinal model and varied among the five formulations. A lycopene formulation presented greater bioaccessibility in the small intestine (48,02%) than other ones rich in β -carotene (0.96%, 31.29%, 34.45% and 36.22%) or one rich in lutein (0.86%).

Conclusions: These results showed that the available carotenoids amounts for absorption in these products are much lower than declared in the label.

Key words: In vitro digestion, β -carotene, lycopene, lutein, bioavailability

PO2944

PEANUT BUTTER FRUIT: A RICH SOURCE OF LYCOPENE

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Background and objectives: The interest in South American native plant species has been growing in recent years due to their health benefits. The species *Bunchosia armeniaca* (Cav.) DC. is a plant from Andes and the popular name is peanut but-

ter fruit. In Brazil it is cultivated for a long time, but only in domestic orchards, known as caferana, cafezinho, ciruela, caramela, ameixa-do-pará or ameixabrava. Due to its orange to red color, typical of carotenoids, the aim of the present study was to quantify and determine the carotenoids profile in the edible parts of the fruits.

Methods: Peanut butter fruits were collected in January 2013 in the city of Rio de Janeiro, Brazil. Total carotenoid content were evaluated by spectrophotometric method at 450nm and the carotenoids profile by High Performance Liquid Chromatography.

Results: The fruit pulp presented high levels of total carotenoids (40 mg/100 g wet basis), in which 89% was lycopene (36 mg/100 g), followed β -carotene (2.5 mg/100 g) and lutein (0.3 mg/100 g). Lycopene is the carotenoid with the highest antioxidant activity and is present in high concentrations in the prostate tissue, which may explain its role in reducing the risk of prostate cancer. In Brazil, prostate cancer is the second most common among men, behind skin cancer. It is the sixth most common cancer type in the world and the more prevalent in men, accounting for about 10% of all cancers. The tomato and its products are considered the main sources of lycopene in the Western diet.

Conclusions: The peanut butter fruits are a rich source of lycopene presenting 10 times more than the tomato fruit (3.5 mg/100 g). This biodiversity fruit has a great potential of use, once it has a good taste to eat fresh and can also be used as an ingredient in preparations to increase the lycopene levels in food.

Key words: *Bunchosia armeniaca*, carotenoids, biodiversity fruits, bioactive compounds.

PO2945

EVALUATION OF ANTHOCYANIN PROFILE IN APPLE PEEL OF THREE CULTIVARS PRODUCED IN BRAZIL

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Background and objectives: The annual apple production in Brazil has remained around one million tonnes/year. In the processing industry of fruit juices, apple juice is considered one of the main products. This juice production generates 25 to 30% of waste (bagasse: peel, pulp and seed) which has aroused the interest of the scientific community, aiming its use for the