

Title Extraction, separation and partial identification of 'Ataulfo' mango fruit carotenoids
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Abstract

Carotenoids in fruits and vegetables are excellent sources for antioxidants and vitamin A. A reversed-phase HPLC method has been developed in our laboratory for separation and extraction of the carotenoids in crude and saponified extracts from 'Ataulfo' mango fruit grown in México. Fruit were obtained from local markets at adequate stage of ripening and evaluated for objective color, soluble solids and carotenoids extraction, separation and identification. The qualitative chromatographic analysis of crude extracts highlighted the existence of three main peaks which had UV-Vis spectra similar of those reported for all-trans-violaxanthin, 9-cis-violaxanthin and *all-trans*- β -carotene. A saponification step of crude extracts indicated that *all-trans*-violaxanthin and 9-cis-violaxanthin existed in esterified form while *all-trans*- β -carotene was found in a free state. Further LC/TOF-Mass spectroscopy analysis from the main esters of all-trans-violaxanthin and 9-cis-violaxanthin revealed that both were dibutyrate. The identity of *all-trans*- β -carotene was also confirmed by mass spectroscopy. The *all-trans*-violaxanthin levels were higher than 9-cis-violaxanthin levels, both as dibutyrate. 'Ataulfo' mangoes had high content of *all-trans*- β -carotene and low levels of all-trans-violaxanthin and 9-cis-violaxanthin. We conclude that the main xanthophylls from 'Ataulfo' mango are *all-trans*-violaxanthin dibutyrate and 9-cis-violaxanthin dibutyrate while *all-trans*- β -carotene was the more abundant carotene detected. These data are important to assess the value of mango carotenoids for human nutrition and health.