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## OP32

**Characterization of The Dominant Carotenoids in Red Fruit Oil  
by Chromatography and Spectroscopy Techniques**

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Red fruit (*Pandanus conoideus*) is an indigenous plant in Papua Island and is well known to have many functions for health, such as lowering blood sugar, preventing cancer [1, 2]. In addition, Papua residence uses red fruit as food source, edible oil source, natural colorant, etc. The red color appearance of red fruit oil is strongly influenced by the presence of carotenoids. Previously several studies have been identified some minor carotenoids, such as  $\alpha$ - and  $\beta$ -carotenes and  $\alpha$ - and  $\beta$ -cryptoxanthins, in the red fruit oil, although the other dominant carotenoids have not been characterized [3, 4]. The aim of this study is to characterize the dominant carotenoids in red fruit oil by chromatography and spectroscopy techniques. The separation and purification of the dominant carotenoids were carried out by reversed-phase high-performance liquid chromatography (RP-HPLC) using a gradient elution of methanol, methyl ter-butyl ether and water. The isolated carotenoids were then identified based on the spectrophotometric, chromatographic and mass spectrometric properties compared to those in the references [5, 6]. Carotenoids from red fruit oil were well separated within 30 min by HPLC analysis. A trace amount of b-Cryptoxanthin,  $\alpha$ - and b-carotenes were detected, while the dominant carotenoids were eluted in front of those three provitamin A carotenoids. Five dominant carotenoids had the maximum absorption wavelength ( $\lambda_{\max}$ ) in the range of 470–480 nm. The mass spectra of the 2<sup>nd</sup> and 5<sup>th</sup> dominant carotenoids showed  $[M + H]^+$  at  $m/z$  601.4 and at  $m/z$  569.6, respectively. These carotenoids were tentatively identified as b-carotenone and semi-b-carotenone from the analysis of molecular ion and  $\lambda_{\max}$  according to Britton et al. [6]. Moreover, the absorption spectra of these keto-carotenoids dissolved in several solvents showed different fine structures, indicating the presence of keto group in their molecular structure. The test of functional group and advance characterization of these carotenoids will be carried out by FT-IR and NMR, respectively. b-Carotenone and semi-b-carotenone were first keto-carotenoids found in red fruit oil and the other three dominant carotenoids are still under the study.

**Keywords:** carotenoid, characterization, chromatography, red fruit oil, spectroscopy