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Original Research Article

Isolation, Purification and Identification of β-carotene from *Azolla Pinnata* R. Br. as a New Carotenoid Wealthy Source

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ABSTRACT

Azolla is a wealthy source of β-carotene. The purpose of this study was to isolate, purify and identify the β-carotene in *Azolla Pinnata* R. Br. plant. In this order, dry and fresh of *A. Pinnata* R. Br. were used and their β-carotene was extracted using the Acetone/Hexane solvent system. For the purification of β-carotene extracted, the column chromatography was used. In the following, an HPLC technique optimized for β-carotene designation and compared with a spectrophotometric standard method. The most appropriate sample conditions were: extraction with Hexane/Acetone 60:40 (v/v) and MeOH/THF/Water 67:27:6 (v/v) as mobile phase. The results indicated that the fresh sample has almost two times higher β-carotene comparing to the dried sample. So due to the importance of β-carotene as an antioxidant in one hand and the free of cost of mass production of *A. Pinnata* on another hand, the application of the water fern can be feasible for commercially β-carotene purification.

Keywords: *Azolla*, β-carotene, Column chromatography, HPLC, Natural product

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