Fractination of Fucoxantin from C*yclotella striata* using Medium Performance Liquid Chromatography (MPLC)

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Abstract

Fucoxanthin has a high value because of its potential as an antioxidant compound that plays an important role in counteracting free radicals, which shown to have anti-inflammatory, anti-tumor, and anti-obesity in humans. Fucoxanthin can be obtained from brown algae and diatoms, one of the sources is *C. striata*. Cultivation of *C. striata* was carried out on agricultural fertilizer media, then harvesting was carried out in the stationary phase using the centrifugation method. Extraction of fucoxanthin was carried out with ethanol and fractionation was carried out by Medium Performance Liquid Chromatography (MPLC), while the analysis was carried out using a UV-Vis spectrometer. Fractionation of fucoxanthin from *C. striata* obtained four fractions, however, asymmetric peaks were seen in fraction 3, which showed a little impurities, and it is confirmed by Thin Layer Chromatography (TLC) analysis, showed elongated stains with Rf 0.56-0.93. Subsequent analysis using a UV-vis spectrophotometer showed a broad peak at a wavelength of 447 nm and a sharp peak at 663 nm which showed the characteristics of fucoxanthin. These studies indicate that the MPLC method can be used for fractionation of fucoxanthin from *C. striata*.

Keywords : Fucoxanthin, extraction, MPLC, ethanol, fractionation, Uv-vis spectrometer, *C. striata*