

## ABSTRACT

### METHOD VALIDATION ANALYSIS OF ANTIOXIDANT POTENTIAL $\beta$ -CAROTENE FROM MICROALGAE *Dunaliella* sp. BY LINEAR SWEEP VOLTAMMETRY TECHNIQUE

By

Ely Setiawati

A study of analytical methods validation of antioxidant potential  $\beta$ -carotene from microalgae *Dunaliella* sp. was conducted by linear sweep voltammetry technique, to obtain information about the performance of the method. Electrodes used in this research were :gold (Au) working electrode, platinum (Pt) auxiliary electrode, and a reference electrode of silver/silver chloride (Ag / AgCl). Potential window of oxidation of  $\beta$ -carotene is 0 mV - 1000 mV with a scan rate of 100 mV/s and 10  $\mu$ A current range. Supporting electrolyte used in this experiment of 0.4 M NaNO<sub>3</sub>. Validation test parameters of this method include : linearity, precision, accuracy and limits of detection. The results showed that the validation of the methods have a correlation coefficient (r) 0.982; % RSD is 7.8%, the % recovery was 112%, and limit of detection was 0.6 mM. The advantage of this method is can calculate the coefficient of the antioxidant activity of  $\beta$ -carotene. Antioxidant activity coefficient of  $\beta$ -carotene has a value of 0.333.

**Keywords:** Validation method, linear sweep voltammetry,  $\beta$ -carotene, microalgae *Dunaliella* sp.