ABSTRACT

THE EFFECT OF ASCORBIC ACIDS ON (-)- EPIGALLOCATECHIN GALATE (EGCG) CONCENTRATION IN GREEN TEA EXTRACT

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Tea (*Camellia sinensis* L.) is widely consumed because of its benefits for health. Epigallocatechin Gallate (EGCG) is the most common catechin compound in green tea, i.e, 70% of catechin total. The therapeutic effectiveness of green tea is depend on EGCG content, therefore it is essential to study the stability of EGCG in green tea extract. This research was focusing on the study of ascorbic acid effect after added to the green tea extract and mixed within 6 hours. EGCG was determined by HPLC method using ShimadzuL20AD with RP C-18 µbondapak column of 10µm, 3,9x300 mm, methanol : water : acetic acid 2% v/v/v (35:60:5) as mobile phase with flow rate of 1,0 ml/min, and detection of EGCG peak at 274,0 nm with diode array detector. The method was validated for the selectivity, linearity, accuracy, precision, limit of detection, and limit of quantitation. The results showed that HPLC method can be applied to determine EGCG content in the sample. The EGCG concentration was decreased up to 24.09% in tea sample extract after addition of 0,2 mg/ml ascorbic acid. On the other hand, EGCG was decreased up to 34.40% for the sample without addition of ascorbic acid. Data were analyzed using SPSS version 24. The paired sample t-test was conducted for data analysis. This study concluded that ascorbic acid can maintain the EGCG content in green tea extract.

Keywords: green tea extract, epigallocatechin gallate (EGCG), ascorbic acid, HPLC