ABSTRACT

METHOD VALIDATION FOR DETERMINATION OF (-)-EPIGALLOCATECHIN GALLATE (EGCG) STABILITY ON GREEN TEA EXTRACT SOLUTION PRODUCT STORED AT 25°C USING HPLC METHOD

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Tea (*Camellia sinensis)* is one of the most popular beverages in Asia. Tea is divided into three categories based on its fermentation process, one of them is green tea. Epigallocatechin gallate (EGCG) is the major green tea polyphenol that posses various health benefits such as antioxidant, anticancer, and antivirus. EGCG in a solution can undergo many chemical changes such as oxidation and epimerization during storage that caused the declining of EGCG concentration. This research was aimed to study the effect of storage time on EGCG content in green tea extract solution that was stored for 32 hours at room temperature (25°C). The samples were analyzed at 0, 2, 4, 8, 16, and 32 hours of storage time. EGCG assay was done by using HPLC (Shimadzu L20AD) with RP C-18 µbondapak column 10µm, 3,9x300 mm, methanol : water : acetic acid 2% v/v (35:60:5) as mobile phase, flow rate 1,0 ml/min, and detection monitored at 276,0 nm with diode array detector. The method was validated for specificity, linearity, accuracy, precision, limit of detection, and limit of quantitation. Results showed that the method can be applied to determine EGCG content on the sample and EGCG concentration declined and decreased by 26,73% during the storage. It was proven that storage time affects EGCG concentration in green tea extract solution.

Keywords: green tea extract, EGCG, storage time, HPLC