ENZYMATIC METHOD WITH MBTH REAGENT IN SPECTROPHOTOMETRIC DETERMINATION OF POLYPHENOL IN GREEN TEA

SHARIFAH BINTI ABD RASHID

BACHELOR OF SCIENCE (Hons.) CHEMISTRY
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA

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ABSTRACT

ENZYMATIC METHOD WITH MBTH REAGENT IN SPECTROPHOTOMETRIC DETERMINATION OF POLYPHENOL IN GREEN TEA

Tea is the second most popular beverages after water in the world. Since there is a growing interest in substances that has antioxidant properties, a new method that can provide innovative applications to the tea-beverage industry must be developed. A simple, faster and environmental friendly method for determination of polyphenol in green tea has been developed which are enzymatic method and analysed by using UV-Vis spectrometry. Tannic acid is used as a standard to determine phenolic compound. The optimum condition of enzyme tyrosinase was determined. The obtained optimum condition of tyrosinase enzyme for response time was 30 minutes and pH of 7. The optimum wavelength was 200 to 400 nm. 2 mL of tyrosinase enzyme and 1.5 x 10^{-5} M tannic acid were also chosen as the optimum condition for tyrosinase enzyme activity. The concentration of polyphenol in green tea was well correlated with the concentration of tannic acid. The percentage relative error between these two methods was 0.11%. The t-test from polyphenol analysis of this method showed that there was no significant difference between the two methods at 95% confidence level.