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Derivative Spectrophotometric Determination of Caffeine in Some Beverages

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Abstract: Caffeine content was determined in cola, coffee and tea by second and third order derivative spectrophotometry without using any separation or background correction technique and reagent. The method is based on the measurement of the distances between two extremum values (peak to peak amplitudes) in the second order (cola) and third order (coffee and tea) derivative spectra of the sample solution. Calibration curves were constructed for the 2.0-10.0 $\mu\text{g ml}^{-1}$ concentration range. As a reference method, reversed phase high performance liquid chromatographic procedure was developed. Commercially available beverages were analyzed by the two methods and the results were statistically compared by using t- and F-tests.

Key Words: Caffeine, Beverages, Derivative Spectrophotometry

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