

**DETERMINATION OF ASCORBIC ACID IN THE  
MULTIVITAMIN BY DIFFERENTIAL PULSE ANODIC  
STRIPPING VOLTAMMETRIC TECHNIQUE AT A GLASSY  
CARBON ELECTRODE**

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## ABSTRACT

### DETERMINATION OF ASCORBIC ACID IN THE MULTIVITAMIN BY DIFFERENTIAL PULSE ANODIC STRIPPING VOLTAMMETRIC TECHNIQUE AT A GLASSY CARBON ELECTRODE

Ascorbic acid cannot be synthesized by humans. This vitamin is rich in the varieties of vegetables and fruits. Nowadays, ascorbic acid has been transformed into multivitamin tablet which well-known as the dietary supplement. Growth in number of multivitamin tablet production increases curiosity among the researcher whether the content of ascorbic acid in the multivitamins dosage are in accordance with the standards and are safe to use by consumer. The differential pulse anodic stripping voltammetry (DPASV) technique using glassy carbon electrode (GCE) as the working electrode and phosphate buffer at pH 4.2 as the supporting electrolyte has been proposed to be developed. The experimental voltammetric parameters were optimized in order to obtain a maximum response with analytical validation of the technique. The optimum instrumental conditions for electroanalytical determination of ascorbic acid by the proposed DPASV technique were initial potential ( $E_i$ ) = 0 V, final potential ( $E_f$ ) = 0.7 V, accumulation time ( $t_{acc}$ ) = 60 s, scan rate ( $\nu$ ) = 0.125 V/s, accumulation potential ( $E_{acc}$ ) = 0 V and pulse amplitude = 0.150 V. The curve was linear from 5 mg/L to 300 mg/L ( $R^2=0.999$ ) with detection limit of 0.25 mg/L. The precisions in terms of relative standard deviation (RSD) were 1.3%, 0.5% and 0.06%, respectively on the same day precision. The recoveries achieved for ascorbic acid

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