

## Nanomolar Quantification of Polydatin at Boron Doped Diamond Electrode. Application in Dietary Supplements

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In this research we demonstrated detailed electrochemistry polydatin. Polydatin is a natural compound with expressed antioxidant activity. Electrochemical behavior of polydatin was tested in the potential range from -1.5 V to 2 V at unmodified boron doped diamond electrode in various pH of supporting electrolyte. It has been noticed that polydatin provides two oxidation peaks, one at around 0.73 V and second at around 1.3 V. In the reverse scan no reduction peak was observed. Quantification of polydatin was done based on first oxidation peak using square wave voltammetry. After optimization of the method, linear working range from  $1 \cdot 10^{-7}$  M to  $7 \cdot 10^{-5}$  M was obtained, with limit of detection and limit of quantification of  $6 \cdot 10^{-9}$  M and  $2 \cdot 10^{-8}$  M, respectively. Negligible interferences effects were noticed. Developed method shows excellent accuracy and precision toward detection of polydatin. Also, developed method was used for quantification of polydatin in dietary supplements.

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**Keywords:** boron doped diamond electrode; dietary supplements; polydatin.

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