



Electroanalytical Characterization of 4-Nerolidylcatechol and its Derivatives

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SUMMARY. 4-Nerolidylcatechol (4-NRC) is the most abundant antioxidant product isolated from the roots of *Pothomorphe umbellata* (L) Miq. It displays important sunscreen protection and other pharmacological properties comprising analgesic, anti-inflammatory and antimicrobial activity. However, low water solubility and chemical instability has limited its use and analysis. Therefore, chemical modifications such as silylated derivatives and inclusion complexes have been proposed. Regarding antioxidants, electrochemical investigation techniques are important tools in comprehensive characterization of phenol molecules, showing higher selectivity than spectroscopic methods. In the present study, the 4-NRC and its derivatives are characterized by voltammetric analysis in order to support physicochemical properties of 4-NRC inclusion-complex and catechol silylation products. It is observed that in both liquid- or solid-state the redox process of the 4-NRC is non-reversible and occurs in two stages, seen as two anodic peaks, respectively, at 0.75 and 1.12 V. The electrochemical techniques showed to be also a powerful tool to evaluate the efficiency of chemical modification on electroactive groups.

KEY WORDS: Antioxidant, Cyclodextrins, Electrochemical, 4-nerolidylcatechol, Silanized Derivatives, Voltammetry.

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