Electrochemical Behavior of Crude Extract of *Brosimum gaudchaudii* and Its Major Bioactives, Psoralen and Bergapten

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Roots from *Brosimum gaudchaudii* Trécul (Moraceae), popularly known as Mama-Cadela, is a traditional medicinal shrub from Brazilian “Cerrado” widely used in the photochemotherapy of vitiligo. Their main actives are the prenylated coumarins, Psoralen (Ps) and bergapten (Bp), which under UV exposure generate active compounds that form adducts with DNA. Though such reactions may involve electron transfer reactions, the redox behavior of BGT and their major isolated furanocoumarins, remain unknown. Therefore the aim of this study was to evaluate the electrochemical behavior of Ps, Bp and crude extracts of BGT by means of voltammetry. The cyclic voltammograms performed for Bp and Ps, confirmed the electroactivity only for Bp, which presented a anodic peak potential at $E_{p1a} = 1.2$ V. Similar behavior was observed for the BGT crude extract. In turn, from the differential pulse voltammograms (DPV), it was observed two small anodic peaks, 1a and 2a at lower peak potentials, which are consistent with hydroquinone and catechol like compounds. Also, it was observed that the main anodic peak occurred close to the Bp peak potential, 1a, whereas no peak was observed for Ps. Therefore, from voltammetric assays, it could be inferred that Bp is present in BGT crude extracts, which were corroborated by HPLC coupled to mass spectrometry. An cheaper and simpler electroanalytical procedure was proposed in order to estimate the amount of Bp in BGT, which despite the low repeatability presented comparable recovery compared to HPLC-PDA.

Keywords: Bergapten, Psoralen, Vitiligo, Psoriasis, *Mama-cadela*

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