Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **29** (7): 1235-41 (2010)

Short communication
Received: Jannurary 24, 2010
Revised version: February 23, 2010
Accepted: March 4, 2010

Voltammetric Determination of Melatonin in Tablet Dosage Forms and Human Serum

Gamal O. EL-SAYED* & Alaa S. AMIN

Chemistry Department, Faculty of Science, Benha University, Benha, Egypt

SUMMARY. **The electrochemical oxidation of melatonin is studied in Britton-Robinson buffer in the pH range 2.2-11.8 by cyclic voltammetry at glassy carbon electrode. Three irreversible, diffusion-controlled oxidation peaks were obtained. The utility of using differential pulse and square wave techniques for determination of melatonin was examined. Different parameters affecting the peak current were analylzed and at optimum conditions, linear calibration plots from 0.02-0.5 mM and 0.04 to 0.5 mM of melatonin were obtained applying the two techniques, respectively. The differential pulse mode was successfully applied to the determination of melatonin in commercial tablets containing about three-folds of vitamin B6 without previous separation. The same technique was also used for melatonin determination in human serum with acceptable accuracy.**

KEY WORDS: Differential pulse voltammetry, Melatonin, Serum, Square-wave voltammetry, Tablets, vitamin B_6.

* Author to whom correspondence should be addressed. *E-mail:* gamaloelsayed@yahoo.com