

# A nitro radical anion formation from nifedipine: an electrochemical approach

Squella, J. A.

Solabarrieta, C.

Nuñez-Vergara, L. J.

The cyclic voltammetric behaviour of nifedipine was studied. The addition of three aprotic solvents to nifedipine in an aqueous citrate buffer system was examined. Qualitatively they result in separation of the initial irreversible 4 electron reduction into two stages, the  $\text{NO}_2/\text{RNO}_2^-$  and  $\text{RNO}_2^-/4\text{H}^+/\text{RNHOH}$ ,  $\text{H}_2\text{O}$  couples, respectively. Particular attention was directed to the 1-electron  $\text{RNO}_2/\text{RNO}_2^-$  couple as measured by the cyclic voltammetric mode in mixed media. Analysis of the cyclic voltammetric response as a function of scan rate and non-aqueous solvent content yields information on the stability of the radical anion. The chemical forward reaction of the radical anion follows a second order kinetics with a stability constant of  $1.1 \times 10^{-3} \text{ l mol}^{-1} \text{ s}^{-1}$  and a half-life time of 0.09 s for 1 mM of nifedipine in aqueous citrate buffer, pH 7.4/DMF; 50:50. © 1993.