

Electroreduction of 4-(nitrophenyl) substituted 1,4-dihydropyridines on the mercury electrode in aprotic medium

Squella,

Jimenez,

Bollo,

Núñez-Vergara,

Electrochemical studies on 4-(nitrophenyl) substituted 1,4-dihydropyridines of pharmacological importance have allowed us to generate the one-electron reduction product, the nitro radical anion, ArNO_2^- , in aprotic media. Cyclic voltammetric technique have been employed to study the tendency of ArNO_2^- to undergo further chemical reaction. Second order kinetics for the decay of ArNO_2^- were established for all the 1,4-dihydropyridines examined. The 1,4-dihydropyridine derivatives that have the nitro group in the orto position in the ring shows a trend to give less stable radicals when comparing with meta substitution. The cyclic voltammograms of the couple $\text{ArNO}_2/\text{ArNO}_2^-$ has also been examined in the presence and absence of glutathione concluding that it does not exist interaction among glutathione and the nitro radical anions in aprotic media. © 1997 Elsevier Science Ltd.