In this paper, electrochemical behavior of a member of tetracycline group compounds doxycycline (DC) was investigated in 20, 30, 40% (v/v) acetonitrile (ACN)-water binary mixture at the pH of 2.0-4.0 prepared Britton-Robinson (BR) buffers, by the differential pulse voltammetric method (DPV). Voltammetric determination of DC was carried out using molecularly imprinted (MIP) and non-imprinted polypyrrole (NIP) modified electrodes. Both types of electrode were prepared by the cyclic voltammetric method. The effect of the ACN-water ratio and pH, on the performance of the MIP electrode was investigated and optimized. The highest anodic signal of DC with MIP electrode was obtained in BR buffer solution was prepared in 30% (v/v) ACN-water at pH 2.0. The detection limit was determined as $4.35 \times 10^{-5}$ M (S/N = 3). The method was also applied for electrochemical determination of DC in pharmaceutical samples. Therecovery factors for Tetradox® and Monodox® were found 96.30%, 61.18% respectively with the relativestandard deviations 0.46 and 0.54. The results of experiments using two commercial drugs showed that the MIP electrode can be used as a sensor to determine DC in pharmaceuticals.