**The Effect of Sodium Dodecylsulphate on the Stability of the Dopamine Species.**

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Dopamine may present various different chemical species depending on the pH value of the solution, besides forming intermediaries in the redox process that takes place [1-4]. The said chemical species forming in solution, have a complex behaviour as a function of time. The present work reports on the effect of the anionic surfactant (sodium dodecylsulphate, SDS) upon the chemical and electrochemical behaviour of the dopamine species in solution, with the former being used in three concentrations bearing the monomeric, premicellar and micellar, form. In the spectrophotometric study carried out, a dopamine signal at 280 nm was observed, which shifts toward the visible region as the pH value is increased. For a system containing only dopamine, a band was registered at 430 nm starting at a pH value of 7.8, which is ascribed to formation of dopamine oxidation products. The band shows up later in the presence of the surfactant, either in premicellar or micellar concentration, at a pH = 9.1. The spectra for this study were obtained in the wavelength range of 190 nm to 900nm.

Also, the voltamperometric study revealed that the three working concentrations of SDS, permitted adsorption of the dopamine acidic species on the electrode surface, thus speeding up its electrochemical process, though adsorption appears to be favoured by the micella.

Figure 1 shows the behaviour of the dopamine at a concentration of $2.4x10^{-3}$ M in the presence of SDS at a concentration of $4.67x10^{-3}$ M in a system containing 0.1 M NaCl at a pH = 1.45 The voltamperometric study was carried out in the potential range of 1000 mV to –1000 mV, scanning in the positive and negative directions at a rate of 100mV/s.

In basic environments, dopamine forms intermediaries during the electrochemical process [5-10]. In the presence of micella, the signals of the intermediaries have improved their definition, as the surfactant allows their adsorption on the surface of the electrode, instead of diffusing speedily through the solution. Also, when pH = 12.87 it was observed that the mycela do not allow oxidation of the dopamine, which is unavoidably oxidised in this environment without surfactant.

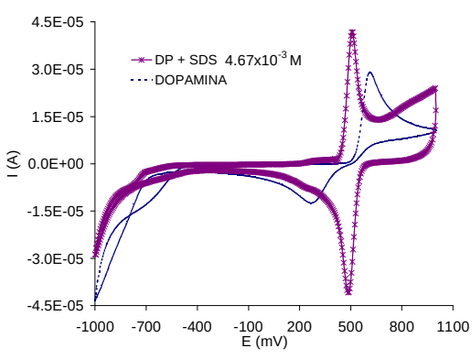


**Figure 1.**

The effect produced by the SDS, either on the chemical or electrochemical behaviour, may become useful to develop systems which allow the stabilisation of the dopamine in basic environments, avoiding formation of oxidation products.

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