Mecanismos eletroquímicos de antipsicóticos atípicos com alta utilização: Olanzapina e Quetiapina

Electrochemical mechanism of highly used atypical antipsichotics drugs: Olanzapine and Quetiapine

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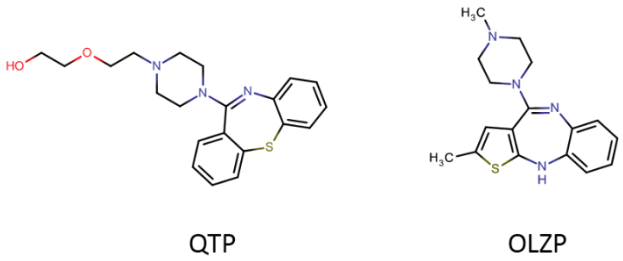
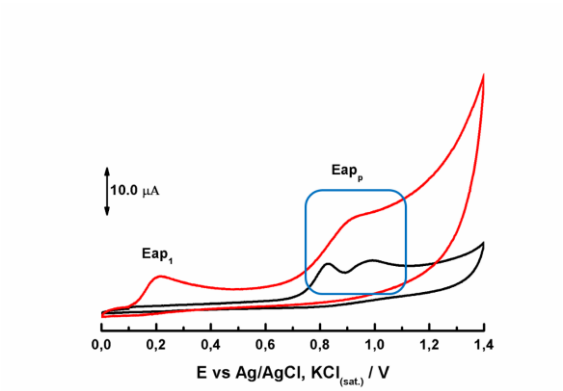
The antipsychotic drugs are one of the most used drugs in the world, generating a revenue of 25.4bi US$ only in US.[1]. Among them, some drugs distinguish, such as Olanzapine (OLZP) and Quetiapine (QTP), Figure 1, which, generated alone a 21.885bi US$ revenue in 2011.[2]



QTP OLZP

Figure 1: Structural schematic representation of QTP and OLZP.



QTP presents two pH dependent oxidation processes, involving one electron each and, which could be attributed to the oxidation in the piperazine ring, Eap_p [3,4], Figure 2. The OLZP also presents two pH dependent oxidation processes, the first; Eap_1 involves one electron, which can be ascribed to the oxidation of the enamine in the seven member ring. The second process involves two electrons and deconvolutes with the pH or scan rate variation. Therefore, it was attributed to the oxidation in the piperazine ring.

Figure 2: Cyclic voltammograms obtained in 1.0 mM of OLZP (red) and 1.0mM of QTP (black) solutions. E_i = 0.0 V; E_λ = 1.4V; E_f = 0.0 V, υ= 100 mV s^{-1}, phosphate buffer (PB), pH 7.4.

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