Comparative Processing of Enzyme Kinetic Data by Henri and Michaelis-Menten Equations

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The deduction of Michaelis-Menten equation is based on the preposition of quasi-steady state, i.e. the concentration of the activated complexes is kept constant in time. In the general case it is not true, particularly at low enzyme concentrations compared to the substrate one. In the present study own experimental data on the nitrate reduction by crude enzyme extract stimulated by constant electric field are handled by both kinetic models. It was demonstrated that the more general model (i.e. the one of Henri) leads to more consistent results and reasonable values of the estimated kinetic constants than the Michaelis-Menten ones in the considered case.