Simultaneous Determination of Isotherm Parameters and Diffusivity for Cephalosporin C in μ-Bondapak C_{18} Chromatography

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From a practical point of view, an ideal method for the simultaneous determination of adsorption equilibrium and mass transfer parameters has been required for the separation and purification of chemical and biochemicals(amino acids, antibiotics and proteins) from dilute mixtures in order to design a chromatography separation process. In this work, we examine the accuracy of isotherm parameters and a mass transfer coefficients within the adsorbernt which were estimated from an analysis of HPLC chromatograms and from batch experiments. The procedure involves matching the shape of experimental HPLC chromatogram with that predicted from a simplified set of model equations for a pulse of adsorbate propagating through ! a μ-Bondapak C18 HPLC column. Here, an orthogonal collocation on finite elements method was used to solve the model equations.