

Adsorption Kinetics, Thermodynamics and Isothermic Heat of Adsorption of Paclitaxel from *Taxus chinensis* onto Sylopute

강희중, 김진현[†]

공주대학교

(jinhyun@kongju.ac.kr[†])

Abstract

Batch experiment studies were carried out on the adsorption of paclitaxel from *Taxus chinensis* onto Sylopute. Comparison of isotherm models revealed that the Langmuir isotherm model could account for the adsorption isotherm data with the highest accuracy among the four isotherm models considered. From the analysis of adsorption isotherms, it was found that adsorption capacity increased with increasing temperature and the adsorption of paclitaxel onto Sylopute was favorable. The obtained kinetics data for paclitaxel adsorption onto Sylopute agreed well with the pseudo-second-order model. Thermodynamic parameters, such as standard enthalpy (ΔH°), standard entropy (ΔS°) and standard Gibbs free energy (ΔG°) change, were investigated. The results indicated that the process of paclitaxel adsorption onto Sylopute was endothermic, irreversible and nonspontaneous.

Acknowledgment

This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (Grant Number: 2015016271).