

## Adsorption of 10-Deacetylpaclitaxel onto Sylopute: Isotherm, Kinetic and Thermodynamic Characteristics

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Batch experiment studies were carried out on the adsorption of 10-deacetylpaclitaxel using sylopute while varying parameters such as initial 10-deacetylpaclitaxel concentration, contact time and adsorption temperature. The experimental data were fitted to the Langmuir, Freundlich, Temkin and Dubinin-Radushkevich isotherm models. Comparison of results revealed that the Freundlich isotherm model could account for the adsorption isotherm data with the highest accuracy among the four isotherm models considered. The obtained kinetics data for 10-deacetylpaclitaxel adsorption onto sylopute agreed well with the pseudo-second-order model. Thermodynamic parameters, such as standard enthalpy ( $\Delta H^\circ$ ), standard entropy ( $\Delta S^\circ$ ) and standard Gibbs free energy ( $\Delta G^\circ$ ) change, were investigated. The results indicated that the process of 10-deacetylpaclitaxel 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)