

Adsorption characteristics of paclitaxel/10-deacetylpaclitaxel from *Taxus chinensis* onto  
Sylopute

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A batch experiment was conducted to investigate the effect of 10-deacetylpaclitaxel (10-DAP) on the adsorption characteristics of paclitaxel in a two-component adsorption of paclitaxel and 10-DAP by varying the concentration of 10-DAP (1000–3000 ppm) and adsorption temperature (298–318 K). The maximum adsorbed amount and adsorption rate constant of paclitaxel decreased by 10.1–21.3% and 5.5–28.6% at 298 K, 6.0–20.4% and 5.8–28.4% at 308 K, and 6.2–17.7% and 7.5–29.0% at 318 K, respectively, compared with the single-component adsorption of paclitaxel (control). These results show that the decrease rate was higher as the concentration of 10-DAP increased. In addition, as the concentration of 10-DAP increased, the adsorption rate constant decreased at all the adsorption temperatures, indicating that 10-DAP inhibited the adsorption of paclitaxel. The intraparticle diffusion rates decreased by 2.6–6.6% (10-DAP 1000 ppm), 3.6–8.2% (10-DAP 2000 ppm), and 8.0–10.0% (10-DAP 3000 ppm) compared with the control. The thermodynamic study showed that the two-component adsorption was physical, endothermic, irreversible, and nonspontaneous.