

### Effect of Isotherm Parameters on Triangle Region and SMB Performance

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SMB (Simulated Moving Bed) is widely-used technology in petrochemical, fine chemical, sugar, and pharmaceutical industries with an advantage of continuous mass-production. As SMB is more complicated process than batch chromatography on its physical structure and separation mechanism, optimization tools like Triangle-theory is necessary to optimize and design a SMB process. Triangle region in Triangle-theory is determined by the isotherms of the materials to be separated. Competitive Langmuir Isotherm is commonly used and it is expressed by  $K$  (adsorbed equilibrium constant) and  $q_{\max}$ . In this study, we assumed that the isotherms which were used to design and optimize a SMB process were changed by aging of adsorbent in columns and we observed the effect of the change of isotherms on SMB performance and triangle region. Simulation studies were performed for four cases with varying  $q_{\max}$  and  $K$  and L-ribose and L-arabinose were used as model components.