Enhancement of Purification Efficiency of Vancomycin by Increased Surface Area Crystallization Process

김성재, 곽은아, 김진현*
공주대학교
(jinhyun@kongju.ac.kr*)

In this study, we investigated the effects of the ion exchange resins on the efficiency of an increased surface area crystallization process for the purification of vancomycin. As surface area-increasing materials, diverse types of ion exchange resin were used to increase the surface area per working volume (S/V). When the S/V was increased, in cation exchange resin Amberlite 200, Amberlite IR 120 (Na), and Amberlite IRC 50 and in anion exchange resin Amberlite IRA 400 (Cl) and Amberlite IRA 910 (Cl), vancomycin crystals were successfully generated. The yield of vancomycin increased (> 97%), and the time necessary for crystallization was reduced dramatically (reduced from 24 hr to 12 hr). On the other hand, increase in the S/V hardly affected the purity of vancomycin (> 95%). In addition, when crystallizing after adding ion exchange resin, a surface area-increasing material, it was possible to obtain even smaller vancomycin crystals than when the resin had not been added.