

Comparison of Adsorbents for Removal of Tar and Waxy Compounds from Plant Cell Cultures

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Adsorbent treatment is an efficient method to remove waxy and tar compounds from plant cell cultures. In this study, sylopute, active clay (F-1), silica (SiO_2), and magnesium oxide (MgO) were applied for the purification of the paclitaxel from plant cell cultures. There was selective adsorption of impurities in the treatment of sylopute and SiO_2 . Therefore, higher purity paclitaxel could be obtained simply in the following process with a higher yield than with active clay or MgO. The purities of crude paclitaxel after sylopute and SiO_2 treatment followed by precipitation were increased up to 57.3% and 59.8%, while the purities for active clay and MgO were 46.9% and 48.4%, respectively. The overall yields of sylopute, SiO_2 , active clay, and MgO were 77.3%, 94.2%, 49.1%, and 57.1%, respectively. The best result in removing impurities was obtained from the combination of sylopute or SiO_2 treatment followed by precipitation process. Consequently, sylopute and SiO_2 can be applied for production scale purification of other natural products as an alternative to synthetic adsorbents other alternative processes.