# Comparison of Solvent Systems for the Purification of Paclitaxel in the Increased Surface Area Precipitation Process

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In this study, we evaluated the efficiency and the behavior as well as shapes and sizes of paclitaxel precipitate as the surface area per working volume (S/V) of the reacting solution is increased in an acetone/pentane precipitation process for the purification of paclitaxel. The purity of paclitaxel after 24 hr of precipitation was 54.0% when there was no surface area increase, while it was 54.2% and 77.7% when the surface area was increased by the use of glass beads and anion exchange resin (Amberlite IRA-400OH). The yield of paclitaxel improved when glass beads were used but decreased when Amberlite IRA-400OH was used. Compared with the case where no surface area increasing agent was employed, the addition of glass beads or Amberlite IRA-400OH as a surface area increasing agent resulted in a considerable decrease in the size of the paclitaxel precipitate. When Amberlite IRA-400OH was added, the zeta potential value in the precipitation solution was higher than when no surface area increasing agent was employed, indicating that the precipitated particles are much more stabilized with the addition of Amberlite IRA-400OH.