

Synthesis of succinic anhydride from succinic acid crystal produced by microbial fermentation

원효진, 허윤석, 이은주, 전영시, 홍연기¹, 홍원희*, 이상엽
한국과학기술원; ¹충주대학교
(whhong@kaist.ac.kr*)

Most of commercially available succinic anhydride has been produced by chemical processes using petroleum as a start material. However, there has recently been much interest in the biological production succinic anhydride from succinic acid by microbial fermentation.

Succinic anhydride is one of the derivatives of succinic acid, and it is widely used in the manufacture of pharmaceuticals, photographic chemicals, surface active agents, organic flame and retardant materials. Therefore, there are a lot of efforts to produce the succinic acid from the fermentation broth, and the crystallization process as purification and separation processes required to produce the highly purified succinic acid from the fermentation broth produced by recombinant microorganism, *Mannheimia succiniciproducens* was investigated.

In this study, succinic anhydride was synthesized using succinic acid crystal produced by fermentation broth. The method used for synthesis of succinic anhydride is eliminating water from succinic acid crystal using acetyl chloride.

The synthesized succinic anhydride was analyzed for chemical structure using NMR and FTIR.