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研究简报

Purification of L-Lysine in Simulated Moving Bed and Fixed-Bed Chromatography

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摘要 L-Lysine was produced by a microbial process utilizing a Corynebacterium glutamicum (ATCC 21799) strain. L-Lysine was purified from the cultivated medium by fixed-bed and simulated moving bed (SMB) chromatography. The separation conditions including pH, eluent concentration and Lys+ and Lys2+ adsorption isotherms were studied in batch adsorption. The column capacity, eluent flow rate and eluent concentration have been studied in fixed-bed chromatography. Maximum purification rate of lysine was obtained as 0.066 g/(g·h) (per gram resin and per hour) at an eluent flow rate of 10 mL/min in fixed-bed chromatography. The results obtained from SMB were 0.11 g/(g·h) for L-lysine purification rate and 96% for L-lysine recovery.

关键词 ion exchange chromatography； simulated moving bed； purification； L-lysine

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Abstract

L-Lysine was produced by a microbial process utilizing a Corynebacterium glutamicum (ATCC 21799) strain. L-Lysine was purified from the cultivated medium by fixed-bed and simulated moving bed （SMB） chromatography. The separation conditions including pH, eluent concentration and Lys+ and Lys2+ adsorption isotherms were studied in batch adsorption. The column capacity, eluent flow rate and eluent concentration have been studied in fixed-bed chromatography. Maximum purification rate of lysine was obtained as 0.066 g/(g·h) (per gram resin and per hour) at an eluent flow rate of 10 mL/min in fixed-bed chromatography. The results obtained from SMB were 0.11 g/(g·h) for L-lysine purification rate and 96% for L-lysine recovery.

Key words ion exchange chromatography； simulated moving bed； purification； L-lysine

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