

등유에 용해된 Amberlite LA-2에 의한 페니실린 G의
반응추출에 관한 속도론적 연구

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Penicillin G was extracted by the carrier, Amberlite LA-2, in a nonpolar organic solvent in a dispersed liquid-liquid extraction system. A mass transfer model for the system has been developed for the purpose of getting a kinetic expression of the reaction between penicillin G and the carrier. The model takes into account the reaction at the interface between continuous aqueous phase and dispersed organic drops, and the diffusion of penicillin G in the dispersed organic drop. The calculated results from the model were in good accordance with the experimental data. Also, the validity of the model was certified by comparing the experimental data with the calculated results from the model at a wide range of Danckwert and Biot numbers used to determine which rate step has a larger effect on the extraction rate. Besides, the rate expression of the interfacial reaction determined here could be satisfactorily used to explain the effect of initial penicillin G concentration on penicillin G extraction by the carrier in our previous ELM systems.