Enantioseparation of (S)-amlodipine from pharmaceutical wastewater by hollow-fiber supported liquid membrane: central composite design and optimization

Niti Sunsandee, Naphaphan Kunthakudee, Boonta Chutvirasakul, Suphot Phatanasri, Prakorn Ramakul

Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok 10330, Thailand, Tel. +662-218-6890, Fax +662-218-6877, email: s_phatanasri@yahoo.com (S. Phatanasri)
Department of Chemical Engineering, Faculty of Engineering and Industrial Technology, Silpakorn University, Nakhon Pathom 73000, Thailand, Tel. +6681-682-2105, Fax +6634-219-368, email: p_ramakul@su.ac.th (P. Ramakul)
Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Srinakharinwirot University, Nakhon Nayok 26120, Thailand

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ABSTRACT

The enantioseparation of (S)-amlodipine and (R)-amlodipine from pharmaceutical wastewater by hollow fiber supported liquid membrane was examined. The pH effects of feed solution, concentration of (+)-DBTA, temperature and the flow rates of feed and stripping solution were investigated. A central composite design (CCD) was used for the design of experiment and to determine the significant factors and their interactions. Regression equations were created from the CCD to predict the percentages of extraction and stripping with varying factor levels. The validity of the model was evaluated, and the optimized condition determined by response surface methodology. The highest extraction and stripping performances were 82.0 and 76.0%, respectively.

Keywords: (S)-amlodipine; Enantioseparation; Liquid membrane; Hollow fiber

*Corresponding author.