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Kinetic and Removable of Amoxicillin Using Aliquat336 as a Carrier via a HFSLM

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Abstract : Amoxicillin is an antibiotic which is widely used to treat various infections in both human beings and animals. However, when amoxicillin is released into the environment, it is a major problem. Amoxicillin causes bacterial resistance to these drugs and failure of treatment with antibiotics. Liquid membrane is of great interest as a promising method for the separation and recovery of the target ions from aqueous solutions due to the use of carriers for the transport mechanism, resulting in highly selectivity and rapid transportation of the desired metal ions. The simultaneous processes of extraction and stripping in a single unit operation of liquid membrane system are very interesting. Therefore, it is practical to apply liquid membrane, particularly the HFSLM for industrial applications as HFSLM is proved to be a separation process with lower capital and operating costs, low energy and extractant with long life time, high selectivity and high fluxes compared with solid membranes. It is a simple design amenable to scaling up for industrial applications. The extraction and recovery for (Amoxicillin) through the hollow fiber supported liquid membrane (HFSLM) using aliquat336 as a carrier were explored with the experimental data. The important variables affecting on transport of amoxicillin viz. extractant concentration and operating time were investigated. The highest AMOX- extraction percentages of 85.35 and Amoxicillin stripping of 80.04 were achieved with the best condition at 6 mmol/L [aliquat336] and operating time 100 min. The extraction reaction order (n) and the extraction reaction rate constant (kf) were found to be 1.00 and 0.0344 min-1, respectively.

Keywords : aliquat336, amoxicillin, HFSLM, kinetic
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