

Chiral separation of Phenylalanine using D-Phe imprinted copolymer membrane

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Molecularly imprinting process is followed by the introduction of small amount of template molecules in polymerization medium. After polymerization template is extracted from the polymer matrix leaving cavities corresponding to the template molecule, which makes polymer more selective.

The molecularly imprinting technology is an effective method of encoding information in bulk material on molecular scale. Due to this remarkable property, molecularly imprinting polymer has been used in the research of drug delivery, affinity based solid phase extraction, sensor technology and chiral separation.

We have developed membranes using molecularly imprinting technique. The copolymer D-Phe imprinted poly (acrylonitrile-co-acrylic acid) was prepared by insitu imprinting method. Then polymer was cast on glass plate and membranes were prepared by wet phase inversion method. To investigate separation ability of membrane, ultrafiltration process was applied. Racemate solutions of 100-ppm and 10-ppm were used and it was investigated that after 25 ml of filtration the adsorption selectivity of membrane was 0.57 and 0.37 respectively.

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