

分离工程

D-色氨酸印迹中空纤维复合膜制备及其性能

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摘要 以聚砜 (PSF) 中空纤维超滤膜为基膜, 采用表面紫外光聚合方法制备了D-色氨酸印迹中空纤维复合膜 (CMIHFCM)。由SEM分析表明经过表面聚合后的D-色氨酸印迹中空纤维复合膜表面具有层叠交联状复合层, 其厚度约3 μm 。实验结果表明D-色氨酸印迹中空纤维复合膜对模板分子D-色氨酸具有很好的识别作用, D, L-色氨酸的分离因子 (α) 最高可以达到5.0, 大于非分子印迹复合膜的识别选择性。此外, 引发剂的用量对D-色氨酸印迹中空纤维复合膜的识别性能有较大影响; 当引发剂的浓度为1.0%, 制得的D-色氨酸印迹中空纤维复合膜对D-色氨酸具有较好的识别性能, 具有良好的应用前景。

关键词 [手性分子印迹](#) [复合膜](#) [手性识别](#) [D-色氨酸](#)

分类号

Properties of D-tryptophane molecular imprinting composite membranes and its preparation

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Abstract

Using polysulfone (PSF) hollow fiber membrane as the supporting membrane, chiral (D-tryptophane) molecular imprinted hollow fiber composite membrane (CMIHFCM) was fabricated by the surface photo-polymerization method and the recognition ability of CMIHFCM for D, L-tryptophane was studied. After surface polymerization, the external surface of CMIHFCM had a complex network layer with a thickness of 3 μm on the supporting membrane. The experimental results showed that CMIHFCM had the recognition ability for the template D-tryptophane. The D-tryptophane solution could be condensed more significantly by the molecular imprinted membrane than L-tryptophane, and the separation factor (α) of D-tryptophane (D-Trp) and L-tryptophane (L-Trp) could be 5.0. However, the recognition for D-tryptophane by the non-molecular imprinted membrane was weaker. When the concentration of initiator was 1.0%, CMIHFCM with good recognition ability for D-Trp was obtained.

Key words [chiral molecular imprinting](#) [composite membrane](#) [chiral recognition](#) [D-tryptophane](#)

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