

 中文标题 检索 跨刊检索

溶液环境中中药模拟体系陶瓷膜微滤过程的影响

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中文摘要:目的:探讨不同“溶液环境”对中药模拟体系陶瓷膜微滤过程的影响。方法:以大豆蛋白、小檗碱二元体系为考察对象,以膜通量、小檗碱透过率、蛋白质截留率为指标,考察不同溶液环境对于膜过程的影响。结果:大豆蛋白在 $1\text{ g}\cdot\text{L}^{-1}$ 的质量浓度下,膜通量最小,小檗碱的透过率随浓度增加略有降低,pH 4时膜通量最大,蛋白质截留率达99%,且小檗碱的透过率达到60%以上。结论:通过优化中药水提液的溶液环境,可以有效提高膜分离的效率,对于以蛋白质为主要膜污染物的溶液体系,调节pH至蛋白质的等电点附近时,膜分离效果较好。

中文关键词:溶液环境 膜通量 模拟体系 蛋白质 小檗碱

Effect of solution environments on ceramic membrane microfiltration of model system of Chinese medicines

Abstract:Objective: To investigate the effect of different solution environments on the ceramic membrane microfiltration of model system of Chinese medicines. Method: Taking binary system of soybean protein-berberine as the research object, flux, transmittance of berberine and trapping rate of protein as indexes, different solution environment on membrane process were investigated. Result: When the concentration of soybean protein was under $1\text{ g}\cdot\text{L}^{-1}$, the membrane flux was minimum with the trapping of berberine decreased slightly as the concentration increased. When pH was 4, the flux was maximum with the trapping rate of protein was 99%, and the transmittance of berberine reached above 60%. Conclusion: The efficiency of membrane separation can be improved by optimizing the solution environment of water-extraction of chinese medicines. The efficiency of membrane separation is the best when adjust the pH to the isoelectric point of proteins as the main pollutant in aqueous solution.

keywords:solution environment membrane flux the distributing of filtration resistance protein berberine

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