Purification effect of PES-C ultrafiltration membrane incorporated with emodin on acanthopanax senticosus injection

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Abstract

A new PES-C/emodin ultrafiltration membrane was prepared by blending natural emodin with phenolphthalein polyethersulfone (PES-C), and it was used to purify [acanthopanax](javascript:;) [senticosus](javascript:;) injection in this study. For the purified [acanthopanax](javascript:;) [senticosus](javascript:;) injection, its color became lighter and its clarity increased. On the contrary, for [acanthopanax](javascript:;) [senticosus](javascript:;) injection containing macromolecules, its color deepened and its turbidity increased. Thermal stability of the purified [acanthopanax](javascript:;) [senticosus](javascript:;) injection was the best, followed by the original solution of [acanthopanax](javascript:;) [senticosus](javascript:;) injection, and [acanthopanax](javascript:;) [senticosus](javascript:;) injection containing macromolecules was the worst. The finger-print spectrum of the purified [acanthopanax](javascript:;) [senticosus](javascript:;) injection was similar with the original solution of [acanthopanax](javascript:;) [senticosus](javascript:;) injection, the relative peak area of each single peak was greater than 0.95, and the relative peak area of the total peak was greater than 0.96. Compared with the original solution of [acanthopanax](javascript:;) [senticosus](javascript:;) injection, the histamine release amount and cell degranulation rate of [acanthopanax](javascript:;) [senticosus](javascript:;) injection containing macromolecules increased more, while those of the purified [acanthopanax](javascript:;) [senticosus](javascript:;) injection decreased, which reduced the risk of allergic reaction at a certain extent. “Inverse proof” confirmed that the [acanthopanax](javascript:;) [senticosus](javascript:;) injection containing macromolecules had certain liver and kidney toxicity, which indirectly proved that the liver and kidney toxicity of the purified [acanthopanax](javascript:;) [senticosus](javascript:;) injection was effectively reduced.

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