



Preparation, Evaluation and Formulation Optimization of Sustained Release Microcapsuled Ion-Exchange Resin Beads Containing Ambroxol Hydrochloride

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SUMMARY. Microcapsulated ion-exchange resin beads containing ambroxol hydrochloride were prepared to control their drug release. The drug-resin complexes were prepared by the bath method. Then the emulsion solvent diffusion method was employed to prepare modified release microcapsulated ion-exchange resin beads containing ambroxol hydrochloride. The percentage of drug released was used as an index to investigate the individual factor. Orthogonal experiments were carried out to identify the optimum coating formulas. Then the microcapsules with marked sustained-release characteristics were made by the optimum coating formulas in which the ratio of Eudragit®RS100 to Eudragit®RL100 was 25:75, the concentration of coating material in acetone was 2% and the ratio of drug-resin complexes to coating materials was 10:1.

RESUMEN. Se prepararon perlas de resina de intercambio iónico microencapsuladas que contienen clorhidrato de ambroxol para controlar la liberación del fármaco. Los complejos de fármaco-resina se prepararon por el método del baño. Luego se empleó el método de difusión de disolvente en emulsión para preparar las perlas de resina de intercambio iónico microencapsuladas que contienen clorhidrato de ambroxol de liberación modificada. El porcentaje de fármaco liberado se utiliza como índice para investigar el factor individual. Se llevaron a cabo experimentos ortogonales para identificar las fórmulas de recubrimiento óptimas. Las microcápsulas con características marcadas de liberación sostenida fueron hechas con fórmulas de revestimiento óptimas en que la relación de Eudragit®RS100 a Eudragit®RL100 era 25:75, la concentración de material de recubrimiento en acetona fue del 2% y la proporción de complejo droga-resina a material de revestimiento fue de 10:1.

KEY WORDS: ambroxol hydrochloride, emulsion solvent diffusion technique, ion exchange resin, sustained-release microcapsule.

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