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RESEARCH NOTES

高矣物的特性对双水相相图和头孢氨苄及7-ADCA分配行为的影响

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摘要 A series of ethylene oxide (EO)-propylene oxide (PO) random co-polymers (EOPO) were used to formaqueous two-phase systems (ATPS) with ammonium sulfate. Effects of EOPO's properties on the phase separationbehaviors and on the partition of cephalexin and 7-aminodesacetoxicephalosporanic acid (7-ADCA) in ATPS wereinvestigated. Both the molar mass and molar ratio of EO to PO of EOPO could greatly influence partition behaviorsof cephalexin and 7-ADCA as well as the binodal curve of ATPS. With the increase of molar mass of co-polymeror the decrease of molar ratio of EO to PO, the critical point of ATPS decreased, the binodal curve became moreasymmetry, and both cephalexin and 7-ADCA followed the same tendency to partition into the polymer-poorbottom phase. The experimental results shows that it is feasible to partition cephalexin and 7-ADCA in either thepolymer-rich top phase or the polymer-poor bottom phase by choosing a specific phase-forming EOPO.

关键词 ethylene oxide (EO) and propylene oxide (PO) random co-polymer (EOPO) aqueous two-phase sys-telns partition coefficient phase diagram cephalexin

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Effects of Hydrophobicity of Ethylene Oxide-Propylene Oxide Copolymers on Phase Diagrams of Aqueous Two-Phase Systems and Partition Behaviors of Cephalexin and 7-Aminodeacetoxicephalos Doranic Acid

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Abstract A series of ethylene oxide (EO)-propylene oxide (PO) random co-polymers (EOPO) were used to formaqueous two-phase systems (ATPS) with ammonium sulfate. Effects of EOPO's properties on the phase separationbehaviors and on the partition of cephalexin and 7-aminodesacetoxicephalosporanic acid (7-ADCA) in ATPS wereinvestigated. Both the molar mass and molar ratio of EO to PO of EOPO could greatly influence partition behaviorsof cephalexin and 7-ADCA as well as the binodal curve of ATPS. With the increase of molar mass of co-polymeror the decrease of molar ratio of EO to PO, the critical point of ATPS decreased, the binodal curve became moreasymmetry, and both cephalexin and 7-ADCA followed the same tendency to partition into the polymer-poorbottom phase. The experimental results shows that it is feasible to partition cephalexin and 7-ADCA in either thepolymer-rich top phase or the polymer-poor bottom phase by choosing a specific phase-forming EOPO.

Key words ethylene oxide (EO) and propylene oxide (PO) random co-polymer (EOPO); aqueous two-phase sys-telns; partition coefficient; phase diagram; cephalexin

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