35－33 Chromatographic removal of endotoxin from protein solutions by polymer particles （高分子粒子によるタンパク質水溶液からのエンドトキシンのクロマトグラフィク除去）

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Endotoxins, constituents of cell walls of gram-negative bacteria, are potential contaminants of the protein solutions originating from biological products. Such contaminants have to be removed from solutions used for intravenous administration, because of their potent biological activities causing pyrogenic reactions. Separation methods used for decontamination of water, such as ultrafiltration, have little effect on endotoxin levels in protein solutions. To remove endotoxin from a solution of high-molecular-weight compounds, such as proteins, the adsorption method has proven to be most effective. In this review, we first introduce endotoxin-specific properties in an aqueous solution, and then provide various methods of chromatographic separation of endotoxins from cellular products using polymer adsorbents. We also provide the design of novel endotoxin specific polymer adsorbents.

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