

# **Enhancement of anion-exchange chromatography of DNA using compaction agents.**

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The use of adsorptive chromatography for preparative nucleic acid separations is often limited by low capacity. The possibility that the adsorbent surface area sterically accessible to nucleic acid molecules could be increased by reducing their radius of gyration with compaction agents has been investigated. The equilibrium adsorption capacity of Q Sepharose anion-exchange matrix for plasmid DNA at 600 mM NaCl was enhanced by up to ca. 40% in the presence of 2.5 mM spermine. In addition, compaction agent selectivity has been demonstrated. Spermine, for example, enhances the adsorption of both plasmid and genomic DNA, spermidine enhances binding only of plasmid, and hexamine cobalt enhances only the binding of genomic DNA. Compaction may be generally useful for enhancing adsorptive separations of nucleic acids.

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