

〔物質生命化学科〕

38-14 Chromatographic removal of host cell DNA from cellular products

using column packings with cationic copolymer beads

(カチオン性コポリマー充填カラムを用いたタンパク質水溶液からの DNA の除去)

物質生命化学科	助 手	坂 田 眞砂代
大学院自然科学研究科	後期課程	中 山 実
大学院自然科学研究科	前期課程	藤 崎 貴
物質生命化学科	助 教 授	森 村 茂
物質生命化学科	助 教 授	國 武 雅 司
物質生命化学科	教 授	平 山 忠 一

This paper describes a method for selective removal of DNA from various cellular products using columns packed with cross-linked poly(ethyleneimine) (PEI) beads or cross-linked N,N-dimethylaminopropylacrylamide (DMAPAA) beads. Each bead type showed a high DNA-adsorbing activity under experimental conditions of pH 5.0-9.0 and ionic strength of $I = 0.05-0.4$. When α -globulin was present in solution with DNA under physiological conditions (pH 7.2, $\mu = 0.17$), DNA-removing activity of PEI columns was unsatisfactory because both the DNA and the α -globulin were adsorbed onto the column. In contrast, DMAPAA columns allowed removal of DNA from various protein solutions contaminated with DNA. DNA concentration in each treated protein solution was below 10 ng/mL, and high recovery of proteins was obtained.

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