

研究简报

万古霉素修饰磁性纳米粒子的制备及其细菌分离功能

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收稿日期 2006-7-5 修回日期 网络版发布日期 2006-12-28 接受日期

摘要 制备了万古霉素修饰的磁性纳米粒子, 并研究了其对金黄色葡萄球菌(*S. aureus*)和大肠杆菌(*E. coli* BL21)的选择性吸附分离特性.

关键词 [磁性纳米粒子](#) [万古霉素](#) [生物缔合](#) [细菌分离](#)

分类号 [0614](#)

Preparation and Bacterial Separation Function of Norvancomycin Hydrochloride-immobilized Magnetic Nanoparticle S

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Abstract APTES-bounded MNP were prepared by chemical coprecipitation, followed by coating with (γ -aminopropyl)triethoxysilane. Norvancomycin hydrochloride(Van) was then immobilized onto the amino-functionalized nanopartiles. Powder X-ray diffraction(XRD) results show the inverse spinel structure of MNP. The physics property measurement system(PPMS) indicates that the MNP are superparamagnetic. The presence of Van and APTES on the surface of MNP is confirmed by FTIR. By a separation assay of *S. aureus* and *E. coli* BL21, it is proved that MNP-APTES-Van can selectively capture *S. aureus* within 10 min, which can be isolated readily by applying an external magnetic field.

Key words [Magnetite nanoparticles](#) [Vancomycin](#) [Bioconjugate](#) [Bacterial separation](#)

DOI:

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