

Video Article

Purifying Plasmid DNA from Bacterial Colonies Using the Qiagen Miniprep Kit

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Abstract

Plasmid DNA purification from *E. coli* is a core technique for molecular cloning. Small scale purification (miniprep) from less than 5 ml of bacterial culture is a quick way for clone verification or DNA isolation, followed by further enzymatic reactions (polymerase chain reaction and restriction enzyme digestion). Here, we video-recorded the general procedures of miniprep through the QIAGEN's QIAprep 8 Miniprep Kit, aiming to introducing this highly efficient technique to the general beginners for molecular biology techniques. The whole procedure is based on alkaline lysis of *E. coli* cells followed by adsorption of DNA onto silica in the presence of high salt. It consists of three steps: 1) preparation and clearing of a bacterial lysate, 2) adsorption of DNA onto the QIAprep membrane, 3) washing and elution of plasmid DNA. All steps are performed without the use of phenol, chloroform, CsCl, ethidium bromide, and without alcohol precipitation. It usually takes less than 2 hours to finish the entire procedure.

References