

Isolation of genomic DNA from human whole blood using the QuickPick™ gDNA kit

KEY WORDS: whole blood, genomic DNA, 20 minute protocol, PickPen®

ABSTRACT

The QuickPick™ gDNA kit is intended for use with human whole blood and blood components such as leukocytes and buffy coat, as well as human cultured cells. Below is described the purification of DNA from buffy coat.

INTRODUCTION

Genomic DNA was purified from human whole blood samples collected into heparin tubes. EDTA and citrate blood can also be used. Both fresh and frozen EDTA and heparin blood can be used, but only fresh citrate blood is recommended. Sample volumes of 1 to 50 ul were tested.

PRINCIPLE OF QuickPick gDNA

DNA in the sample is released from cells using Proteinase K and Lysis Buffer. The released DNA is bound specifically to the magnetic particles in the presence of Binding Buffer. PickPen® 1-M is used to capture the magnetic particles with bound DNA, and to carry out subsequent washes to remove contaminants. Finally, DNA is eluted from the particles using Elution Buffer, and DNA is ready for use in downstream applications. The protocol is carried out in 20 minutes, and throughput can be further increased by using PickPen® 8-M.

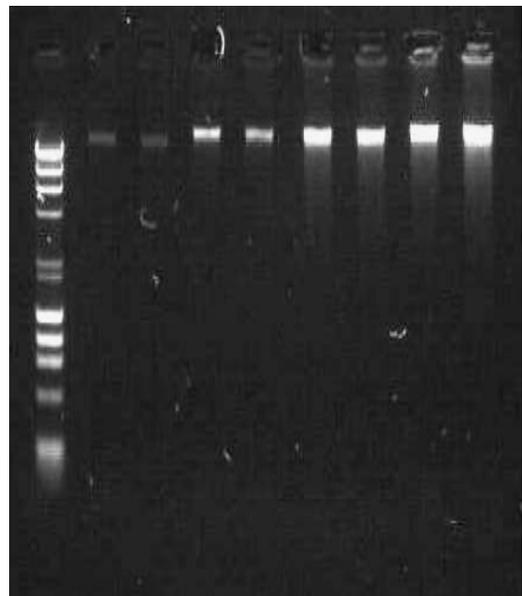
MATERIALS & METHODS

PickPen® 1-M was used to isolate genomic DNA from heparin blood samples of 1µl, 5 µl, 25 µl and 50 µl. DNA was eluted into 25 µl, 40 µl, 200µl and 200 µl Elution Buffer respectively. The QuickPick™ gDNA kit insert protocol was followed.

RESULTS

The isolated DNA samples were loaded onto a 1% agarose gel in duplicate. Intact high molecular weight DNA was detected from all samples applied to the gel, even from the 1µl samples.

M 1a 1b 2a 2b 3a 3b 4a 4b



M = Marker

1 = DNA from 1 µl of whole blood

2 = -----"----- 5 µl -----"-----

3 = -----"-----25 µl -----"-----

4 = -----"----- 50 µl -----"-----