Hudson ROBOTICS, INC.

AppNotes

REAGENT-FREE PCR PURIFICATION WITH DIFFINITY GENOMICS RAPIDTIPS® ON THE HUDSON SOLO

The Hudson SOLO Pipettor

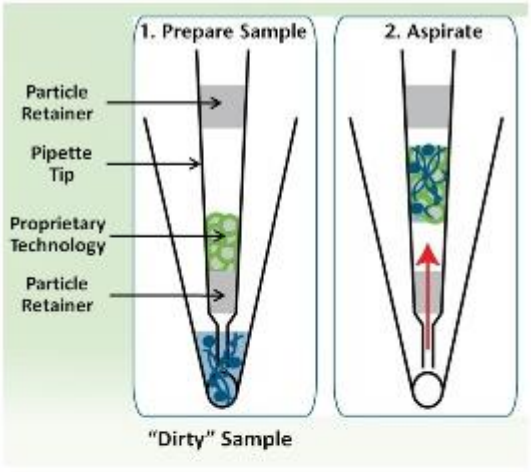

Figure One: Principal behind PCR Purification with Diffinity Genomics' RapidTips

Introduction

Traditional methods for purifying amplified DNA sequences from PCR involve various pieces of equipment and reagents that complicates the procedure and adds to the overall cost of the process. Diffinity Genomics had developed a new product that carries out the entire process inside a modified disposable pipette tip. Hudson Robotics has worked with DG to automate this procedure on the SOLO automated pipettor.

Methodology

The purification procedure is quite simple. A PCR plate is removed from the thermocycler and the seal is removed. The SOLO aspirates a 25uL sample from each well of this plate and carries out several aspirate/dispense mix cycles. The precise number of these steps, the z-axis position of the tip and the amount of time the tip is allowed to sit after each aspirate step is crucial to maximize the final yield of DNA.

The procedure was modified to ensure maximum contact between the sample and the particles suspended in between the upper and lower retainers in the tip. (Figure One describes the how the tip is organized),

Results

The following data shows the compatibility of Diffinity RapidTip with the SOLO in comparison with Qiagen's Qiaquick PCR purification kit.

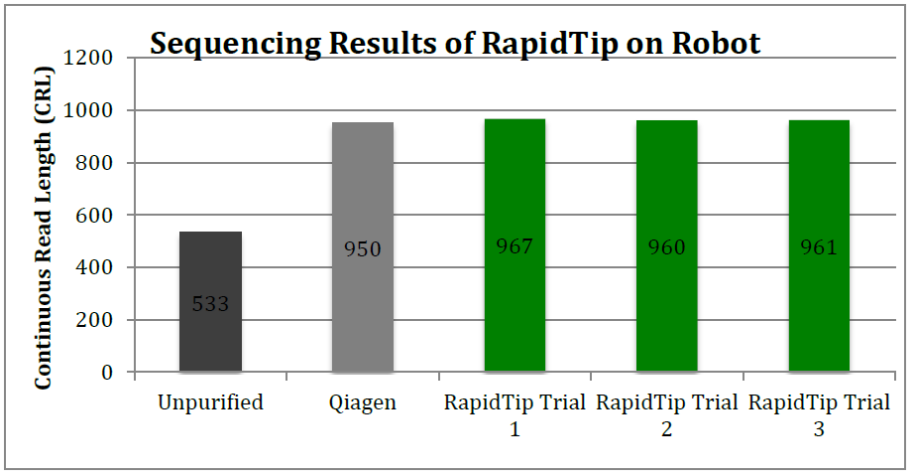

Figure 1. PCR products (1956 bp) were purified using either RapidTip on the Bench Top Robot or using Qiagen Qiaquick spin columns. Samples were then sent to Genewiz for sequencing (sequencing primers were first added per Genewiz instructions). Sequencing results showed a higher CRL with the RapidTip compared to the QiaQuick Spin Column.

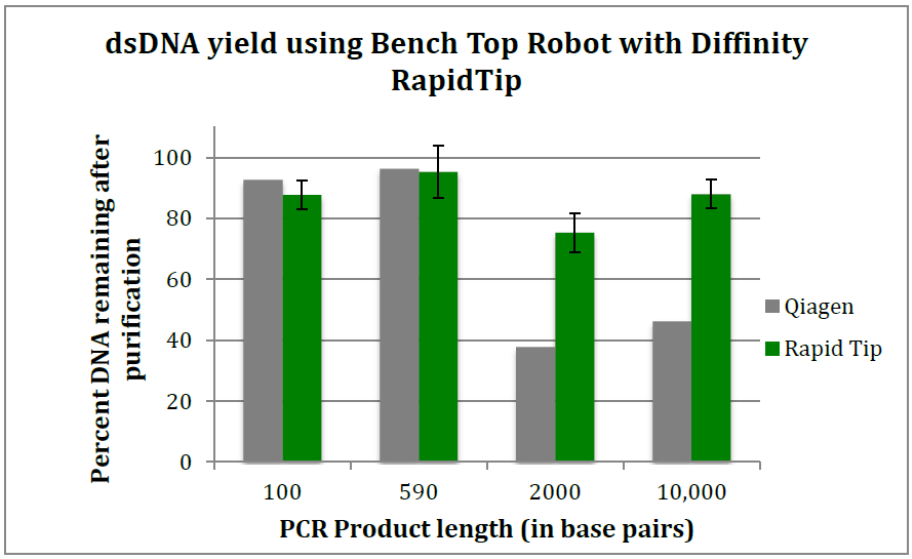

Figure 2. PCR products of varying lengths were purified using either Diffinity RapidTip on the Bench Top Robot or using Qiagen Qiaquick spin columns. Samples were then run on Agarose gel. Gels were stained with SybrSafe (Invitrogen) and analyzed using ImageJ to determine the percent of dsDNA remaining. Diffinity RapidTip showed a comparable, and often times higher yield than in the Qiagen Spin Column.

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