eppendorf

SHORT PROTOCOL No. 14 I February 2016

ep*Motion*® 5070f as a safe transfer tool for handling whole blood samples

Sebastian Pukszta[1], Jolanta Hałuszczak[2]
[1]Invicta Genetic Laboratory, Poland, [2]Eppendorf Poland Sp. z o.o., Poland

Introduction

In a broad variety of assays and experiments such as ELISA, nucleic acid purification and PCR, whole blood is often used as primary sample material. Due to the fact that blood is potentially infectious, the amount of manual interaction is preferred to be as low as possible. Thus scientists routinely working with blood specimen often make use of laboratory automation. Most systems used for the automated DNA extraction from blood require the samples to be provided in a 96 well plate format as opposed to the individual tubes blood samples generally are drawn in.

The Eppendorf ep*Motion* 5070f was set-up in a safety cabinet and programmed to facilitate transfer of human whole blood samples from blood collection tubes to 96 well deep well plates to meet the requirements of a downstream nucleic acid purification system. The ep*Motion* system helps to reduce hands-on time, human error and contamination during this procedure. The broad range of available tube racks for the ep*Motion* allows handling of blood collection tubes from most manufacturers. The liquid level detection allows recognition and adjustment of the proper aspiration height for the pipetting tool to precisely and accurately transfer the desired liquid volume.

Material and Methods

Required equipment
> ep*Motion* 5070 CB or ep*Motion* 5070f
> TS1000 pipetting tool
> Racks for single test tubes, depending on collection tube

Required consumables
> Deep Well Plate as processing plate
> epT.I.P.S.® Motion 1000 µL Filter

High throughput laboratories often need reliable and easy automation of their routine procedures. This method was created to reduce the manual handling of blood samples thus eliminating human contact and possible errors that may occur during manual sample transfers.

The ep*Motion* 5070f was programmed with sample transfer commands to ensure safe and accurate blood pipetting from blood collection tubes to a deep well plate for further automated downstream gDNA purification. The specified and precise level of the biological fluid is a requirement for reliable and robust sample purification.

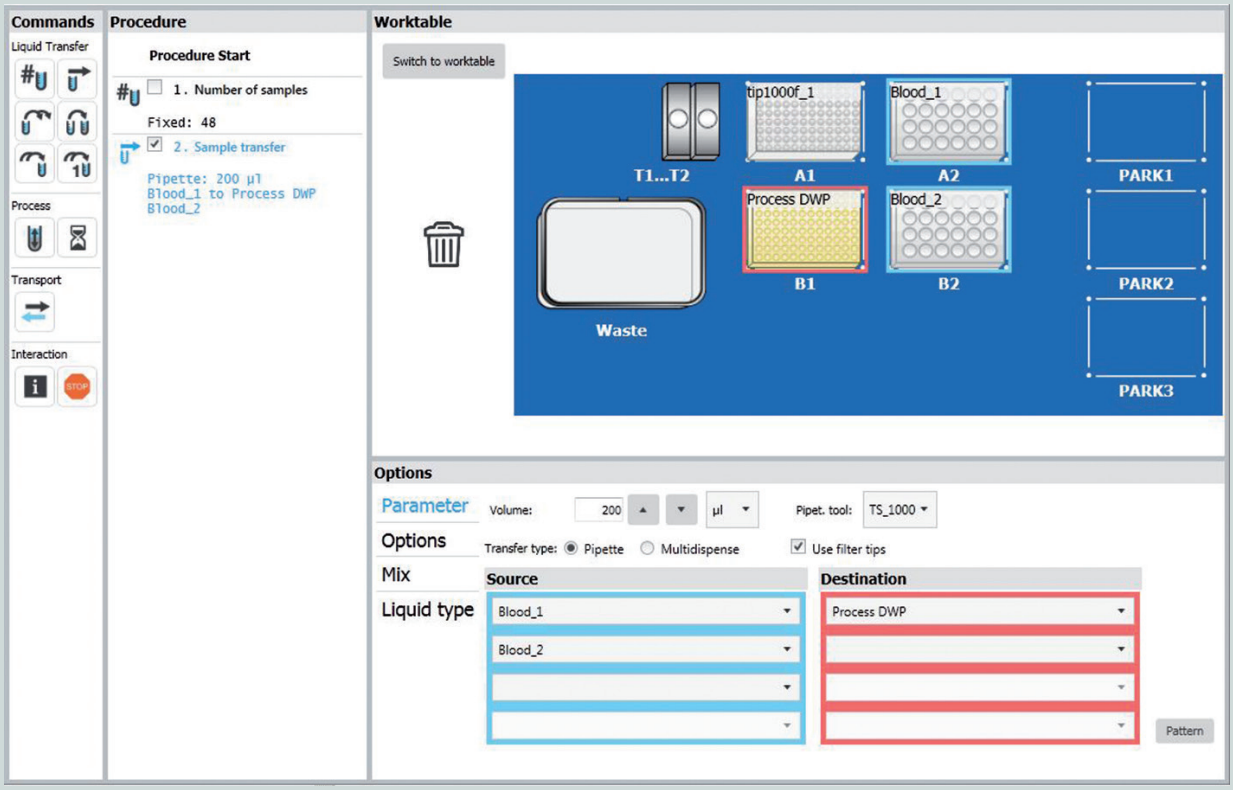

Figure 1: Deck layout of the ep*Motion* 5070f required for the transfer of blood samples

The whole blood collection tubes were centrifuged briefly and placed in racks after cap removal. Automatic liquid level detection was activated to recognize the sample volumes and height adjustment of the liquid aspiration to ensure maximum accuracy of the pipetting process.

The blood samples are premixed at conditions (shown below) followed by a transfer to the processing plate.
Figure 3 shows the optimized liquid type settings for most accurate pipetting during the sample transfer command of whole blood.

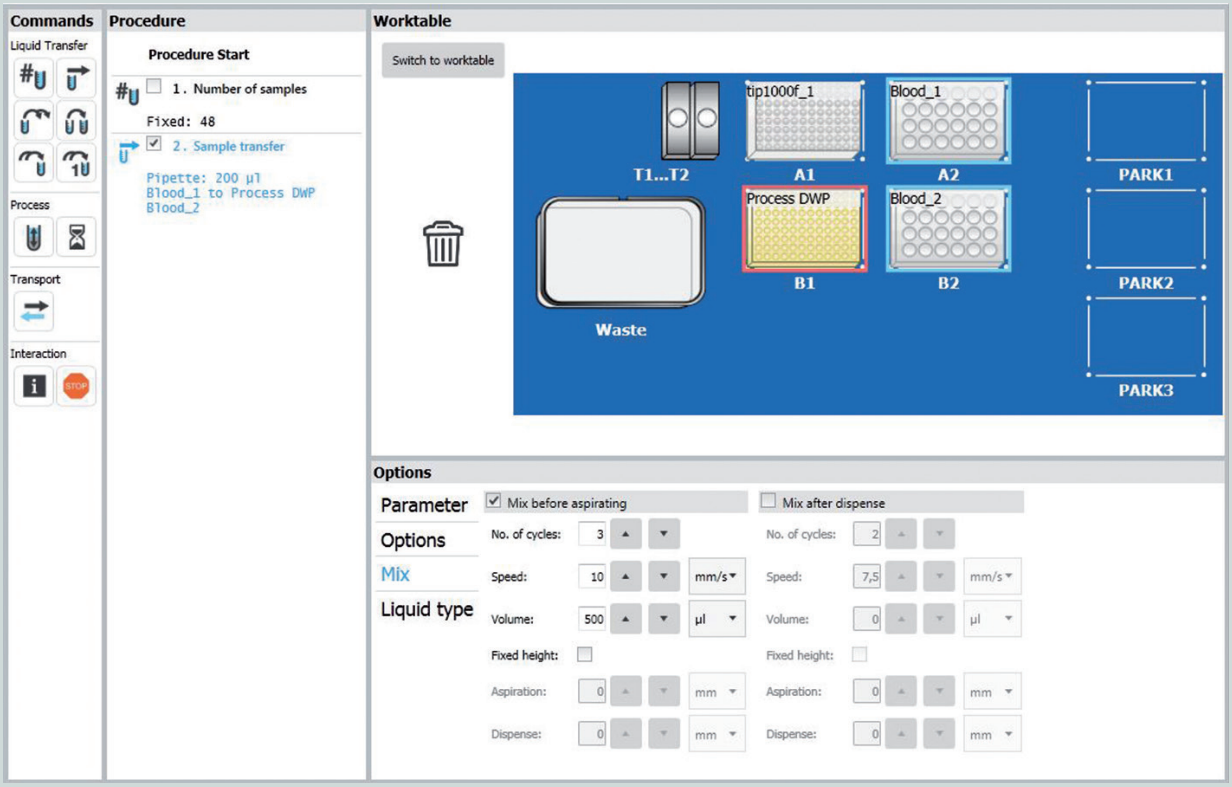

Figure 2: Mix settings prior to the aspiration of the blood samples

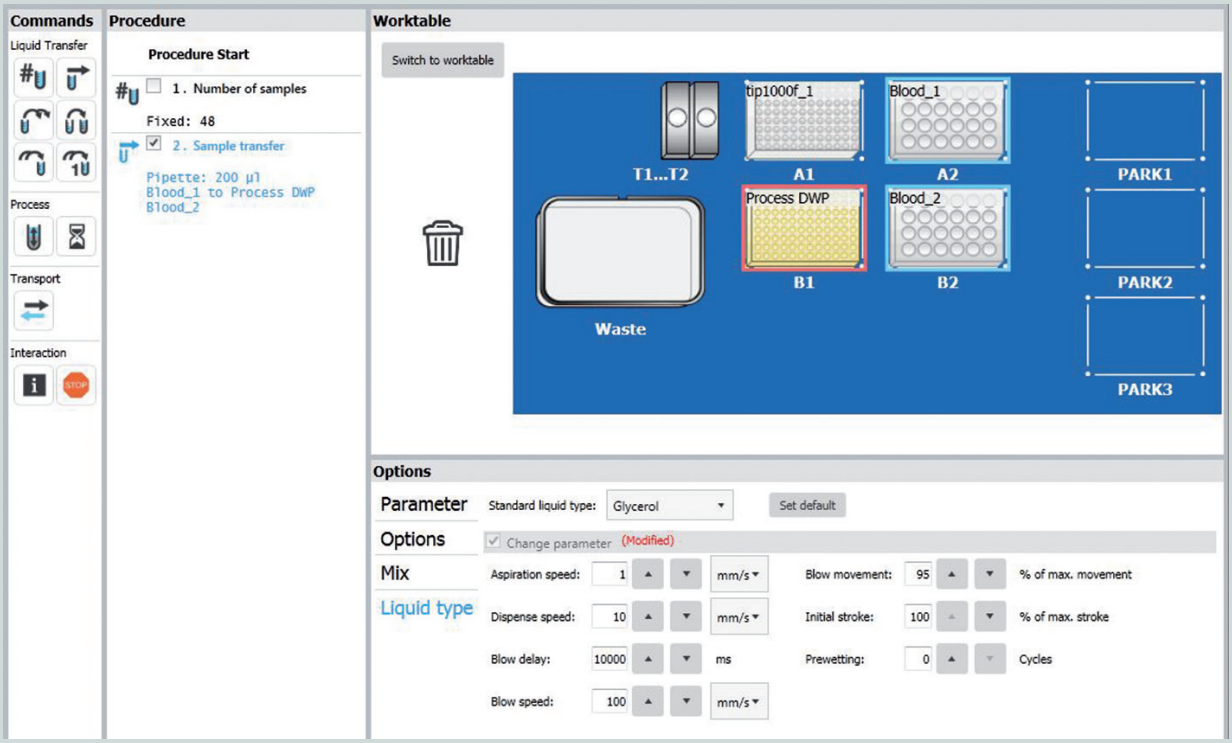

Figure 3: Liquid type settings for the optimal transfer of whole blood

Ordering information

Description	Order no. international
ep*Motion*® 5070f	5070 000.281
Eppendorf EasyCon™ tablet	5073 000.108
TS 1000 dispensing tool	5280 000.053
epT.I.P.S.® Motion, 1000 µL, filtered	0030 015.258
Racks for single test tubes Ø 13 mm × 100 mm max. length	5075 762.005

Your local distributor: www.eppendorf.com/contact
Eppendorf AG · 22331 Hamburg · Germany
eppendorf@eppendorf.com · www.eppendorf.com

www.eppendorf.com/automation