RULES BASED MEDICINE
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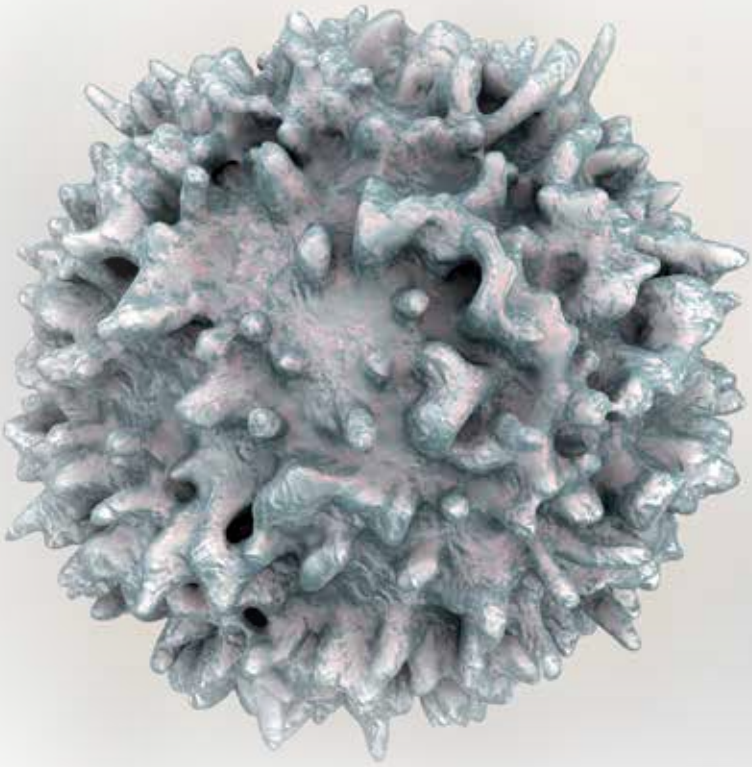
Comparing Blood Draw Protocols for TruCulture

Introduction

TruCulture® is a whole blood collection and incubation system customized to stimulate targeted immune responses. It is a syringe system based on a Sarstedt S-Monovette®. Thus, blood collection into TruCulture tubes can be conducted either by pulling the plunger before (Vacuum Method) or after (Aspiration Method) connecting the TruCulture tube to the subject. (https://www.sarstedt.com/fileadmin/user_upload/99_Broschueren/644_neu/644_c_PosterA3_AnleitungVenoeseBE_SafetyKanuele_GB_US_0815.pdf) This white paper will present data to demonstrate that blood collection into TruCulture tubes by either method is appropriate for the use of TruCulture tubes to stimulate whole blood cultures.

Protocol

Ten healthy subjects were selected. On each subject's right arm, the aspiration method was used, and on each subject's left arm the vacuum method was used. Both collection methods used a Safet-Mulifly® 21G needle (Sarstedt: 85-1638-235). The right arm was drawn first, then the left. From each arm, 5 TruCulture tubes were drawn in the following order: Null (Cat# 782-001086), Null, LPS (Cat# 782-001087), SEB (Cat# 782-001124), CD3/CD28 (Cat# 782-01125).



truculture®

Turning Hope Into Help™

Preparation prior to blood draw

At least 1 hour prior to blood draw, TruCulture tubes were removed from -20°C and thawed at room temperature.

Blood draw

Right arm (Aspiration Method)

1. Insert butterfly needle into vein.
2. Prime tubing: Using an empty S-monovette, connect the syringe to the cannula and pull enough blood into the syringe to prime the tubing of the butterfly needle.
3. Remove priming tube.
4. Connect the first TruCulture tube to the cannula.
5. Once the syringe is connected, pull the plunger into the locked position.
6. After 3-5 seconds, remove filled TruCulture tube and connect next tube.
7. Repeat 4 to 6 until all TruCulture tubes are filled with whole blood.

Left arm (Vacuum Method)

1. Pull the plunger for all TruCulture tubes to be drawn into the locked position (no more than 15 minutes prior to step #2).
2. Insert butterfly needle into vein.
3. Prime tubing: Using an empty S-monovette, connect the syringe to the cannula and pull enough blood into the syringe to prime the tubing of the butterfly needle.
4. Remove priming tube.
5. Connect the first TruCulture tube, with the plunger already in the locked position, to the cannula.
6. After 3-5 seconds, remove the filled TruCultre tube is removed and connect the next tube.
7. Repeat 4 to 6 until all TruCulture tubes are filled with whole blood.

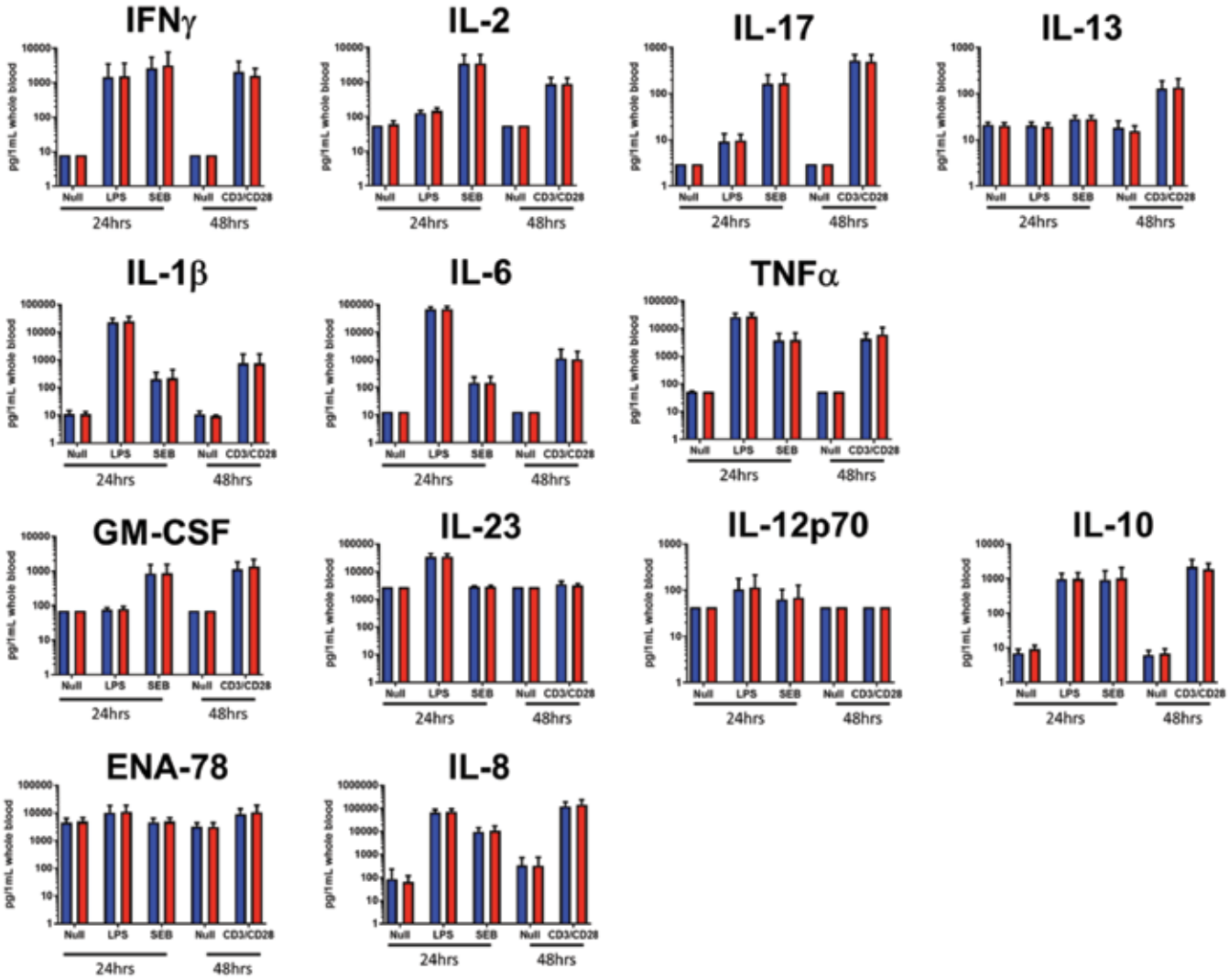
After blood has been collected into all TruCulture tubes, snap off the plunger and invert each tube end-to-end gently 3 times. Then place the tubes upright into a 37°C heat block. After incubating for 24 or 48 hours, the seraplas valve is inserted, and the supernatant removed and stored at -80°C. Analysis of collected supernatants was conducted using the OptiMAP immunoassay panel.

Results

Figure 1 shows that there were no significant differences between the 2 draw methods in any of the 13 analytes measured. This non-significant difference was repeated at both 24 and 48 hour time points and with all TruCulture tubes tested: Null, LPS, SEB, and CD3/CD28.

Figure 1: OptiMAP data comparing TruCulture blood collection methods

Blue bars = Aspiration method. Red bars = Vacuum method. All data graphed as mean with standard deviation error bars. Data analyzed using paired Student's T test. All data was considered non-significant with $p > 0.05$.



CONCLUSION

The data presented indicates that collection of whole blood using the TruCulture tube can be conducted either using the **Aspiration** or **Vacuum** method.

Contact us

Website: RBM.Q2LabSolutions.com/TruCulture

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