

# Comparison of coagulation parameters in Greiner **VACUETTE**<sup>®</sup> 1ml 9NC Coagulation sodium citrate Premium sandwich tube and **MiniCollect**<sup>®</sup> Coagulation tube

## **Background:**

Venous blood with sodium citrate is the most commonly obtained examination sample for coagulation determinations. The additive functions as an anticoagulant by chelating calcium.

However, blood collected by skin puncture, is composed of a mixture of blood from the arterioles, venules and capillaries, it may also be diluted with interstitial and intracellular fluid. Therefore, falsified test results can occur when using capillary blood due to tissue fluid contamination during skinpuncture procedures.

Evacuated **VACUETTE**<sup>®</sup> 9NC Coagulation Sodium Citrate tubes for venous blood collection contain a buffered sodium citrate solution in accordance with the requirements of the international standards for evacuated blood collection systems - ISO 6710, CLSI H01-A5. The sandwich tubes with patented double-wall technology combine two varieties of plastics, PET and PP and are fitted with Safety Twist Caps.

**MiniCollect**<sup>®</sup> Coagulation tubes are plastic, non-evacuated, low sample volume tubes with a pre-defined nominal volume for achieving correct additive concentrations. They are fitted with colour-coded Cross-Cut Caps and suitable for use with venous blood only.

## **Study Objective:**

The coagulation tubes contain a buffered sodium citrate solution. The concentration is 3.2%. The proportion of blood to the sodium citrate anticoagulation volume is 9:1. The tubes are used for analyses in citrated plasma for coagulation testing.

The aim of the evaluation comparison of **VACUETTE**<sup>®</sup> 9NC Coagulation sodium citrate Premium sandwich tubes to **MiniCollect**<sup>®</sup> Coagulation tube was to demonstrate the equivalence of the tested tubes.

## **Study design and procedure:**

The study and its results are applicable to **VACUETTE**<sup>®</sup> 9NC Coagulation sodium citrate Premium sandwich tubes and **MiniCollect**<sup>®</sup> Coagulation tubes.

For the study, the following products were used:

Sample	Draw Volume	Description
454320	1 ml	<b>VACUETTE</b> <sup>®</sup> 9NC Coagulation sodium citrate 3.2% Premium sandwich tube
450413	1 ml	<b>MiniCollect</b> <sup>®</sup> 9NC Coagulation sodium citrate 3.2%

Blood was collected from 51 healthy and pathological donors in total.

One **MiniCollect**<sup>®</sup> tube and one **Vacurette**<sup>®</sup> tube per donor were filled by means of a syringe. Blood was transferred into **VACUETTE**<sup>®</sup> tubes with a blood transfer unit.

The order of draw was randomized. The **MiniCollect**<sup>®</sup> tubes were centrifuged at 3000g/ 10 min in a cooled centrifuge (20°C). The **VACUETTE**<sup>®</sup> tubes were centrifuged at 1800g/ 10 min in a cooled centrifuge (20°C). Determination of the following coagulation parameters was carried out by ACL Classic (Beckman Coulter) within 2h after blood collection: aPTT, Fibrinogen and PT (Quick).

The following kits were used for performance:  
aPTT: Lyophilized silica 0008468710 Instrumentation Laboratory  
Fibrinogen: Fibrinogen-C-002030110-HemosIL- Instrumentation Laboratory  
PT (Quick): PT-Fibrinogen HS-0008468210-HemosIL Instrumentation Laboratory  
Calibration: plasma-0020003700-HemosIL- Instrumentation Laboratory

## **Results:**

Statistically significant differences (p<0.05) between normal and pathological donors could be observed for Fibrinogen (all samples). Statistically significant differences between normal and pathological donors could not be observed for aPTT and PT (Quick).

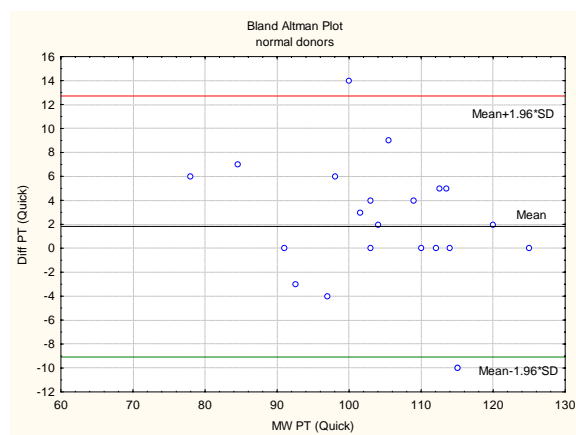
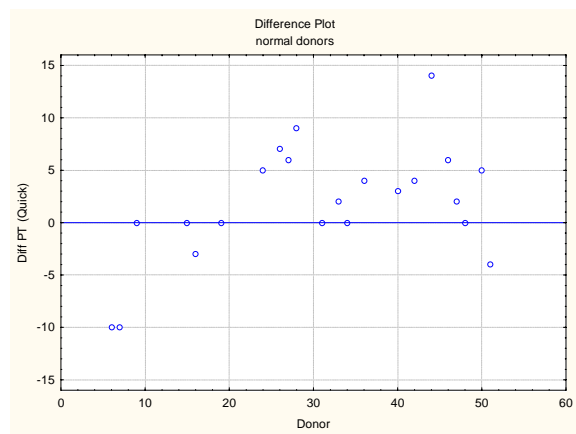
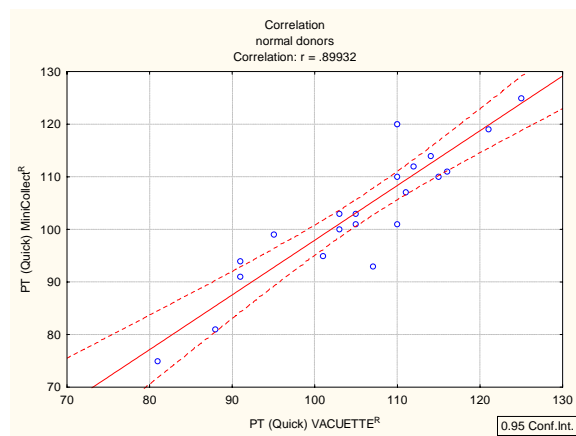
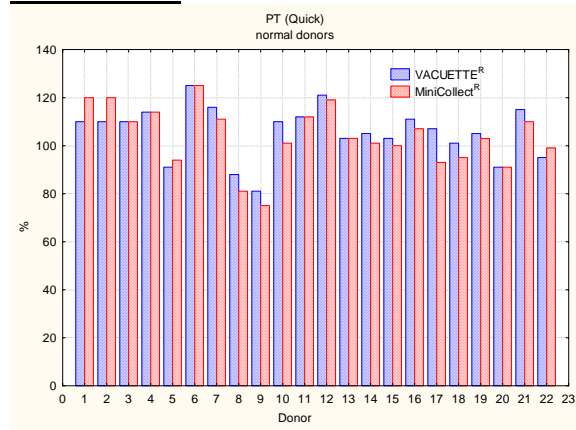
All included samples showed equal results in regards to the tested parameter. Statistically significant differences (p<0,05) could not be observed comparing **VACUETTE**<sup>®</sup> 9NC Coagulation sodium citrate 3.2% Premium sandwich tube and **MiniCollect**<sup>®</sup> 9NC Coagulation sodium citrate 3.2%. The tested samples led to comparable results for normal as well as for pathological values.

## **References:**

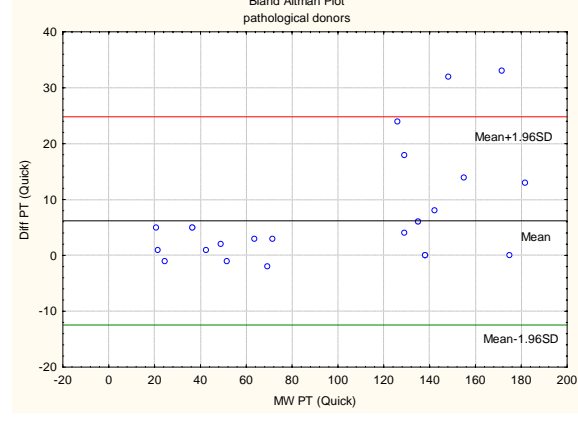
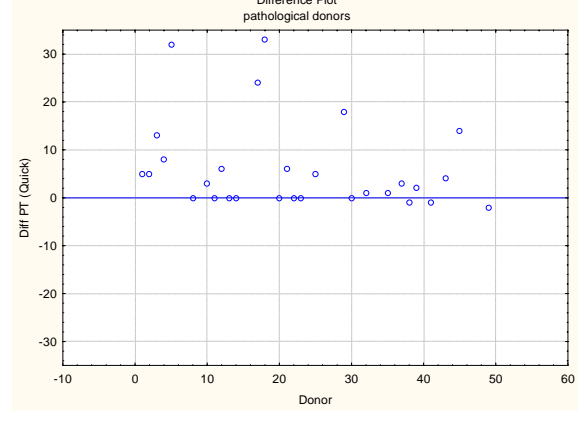
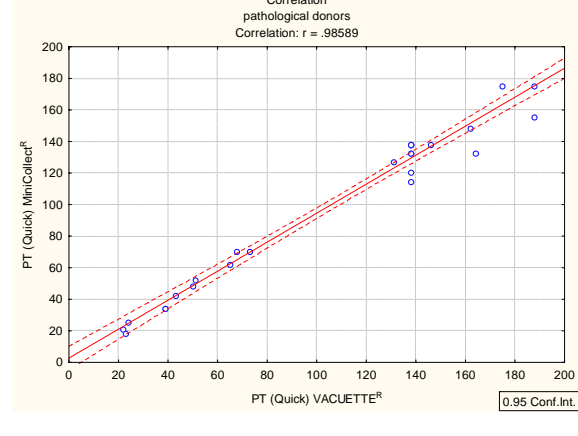
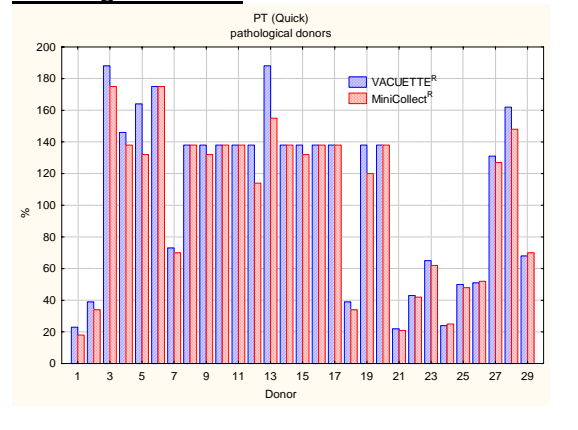
- (1) Barthels M., Gerinnungsanalysen: Schnell-orientierung, Befundinterpretation, klinische Konsequenzen. 6. Aufl. 1998, Georg Thieme Verlag Stuttgart, New York
- (2) Roche Diagnostics, Wissenswertes zur Gerinnung, Fragen/Antworten. Roche Diagnostics GmbH Mannheim
- (3) Tietz N.W., Clinical Guide to Laboratory Tests. W.B. Saunders Company, third edition (1995)

**PT (Quick) (Normal range: 80-130%)**

**Normal donors**

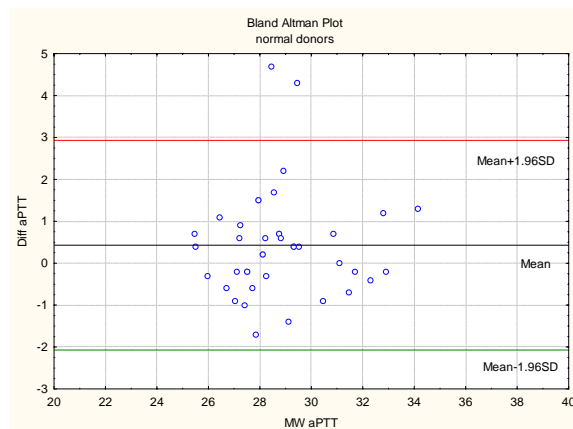
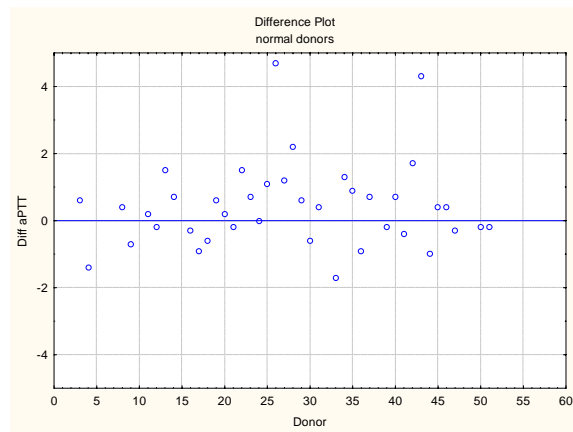
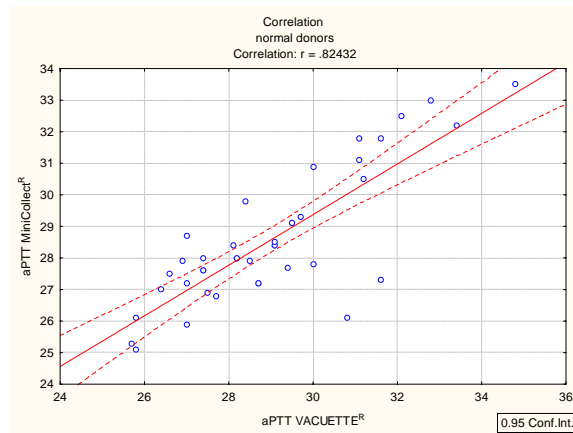
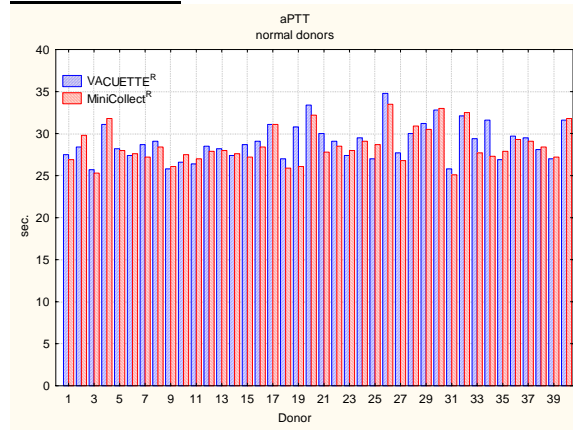


**Pathological donors**

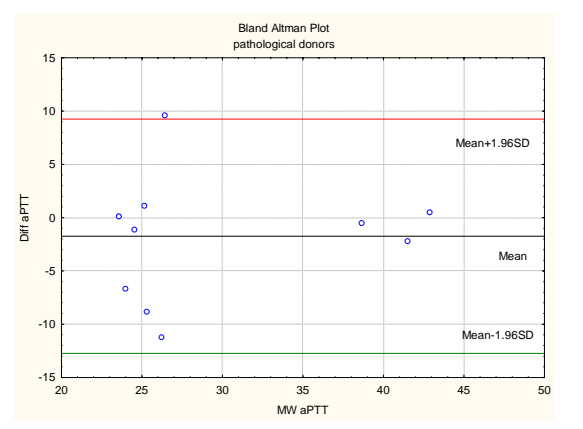
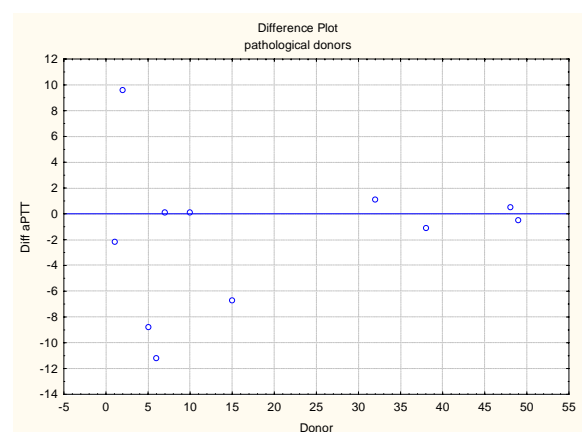
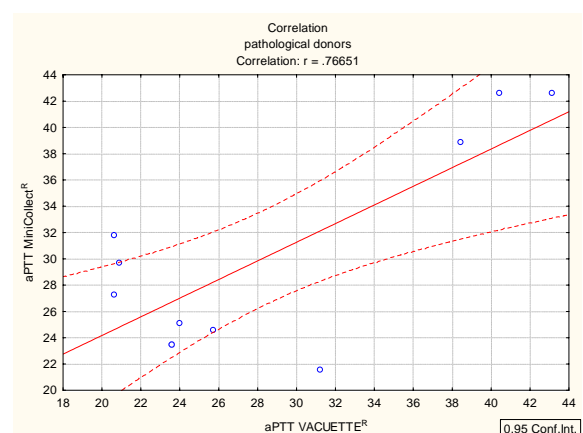
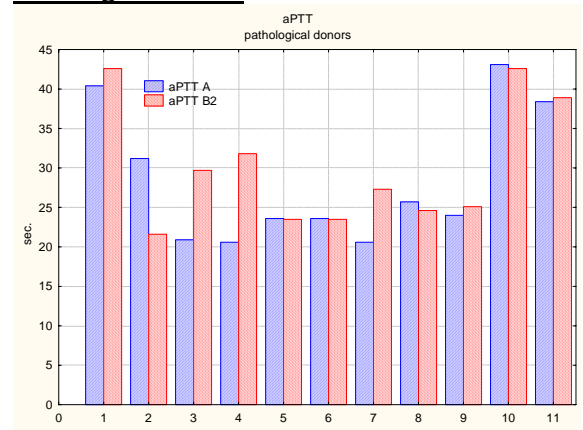


**aPTT (Normal range: 25-37 sec.)**

**Normal donors**

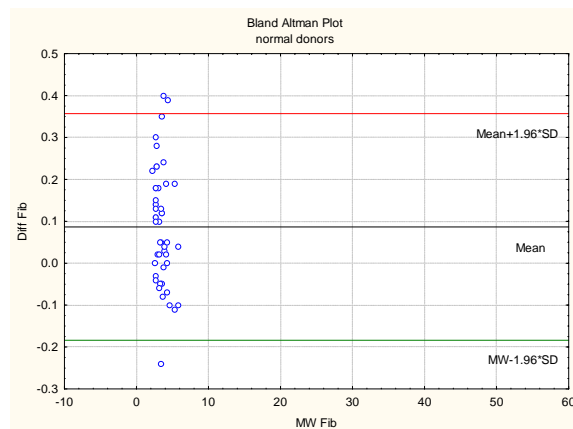
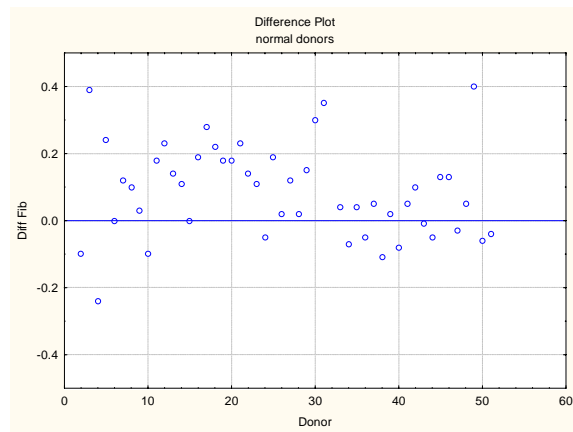
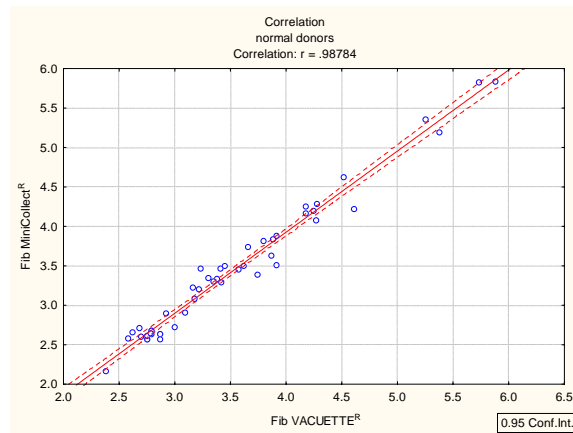
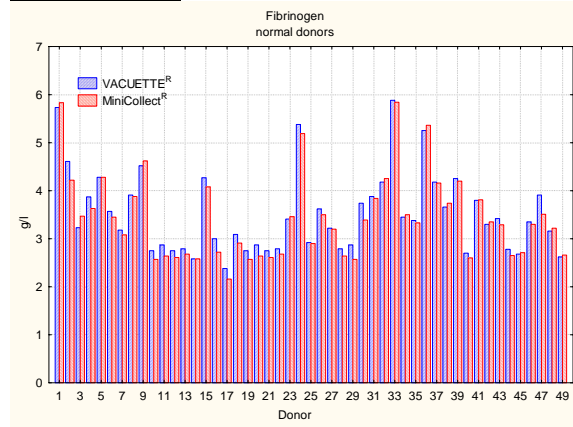


**Pathological donors**



**Fibrinogen (Normal range: 1.89-5.94 g/l)**

**Normal donors**



**Pathological donors**

