



CAJA COSTARRICENSE DE SEGURO SOCIAL
HOSPITAL SAN JUAN DE DIOS
AREA DE GESTIÓN DE BIENES Y SERVICIOS
SUB AREA DE CONTRATACION ADMINISTRATIVA

09 de febrero 2021

SCASC-04-2021

Señores Proveedores

**ASUNTO: Aclaración para el proceso 2021CD-0000006-2102 correspondiente a
“Tubos al vacío contenido EDTA”.**

Estimados señores:

Para lo que corresponda y como aclaración en las especificaciones Técnicas para el Cartel indicado en el Asunto; adjunto copia del oficio H.E. 10-2021 de fecha 09 febrero 2021, suscrito por la Dr. Geovanny Zeledón Zamora, Jefe a.i. División de Hematología, Lab. Clínico, de acuerdo a aclaración solicitada por la empresa NIPRO MEDICAL CORPORATION (la cual adjunto para mejor entender).

No omito manifestar, que demás condiciones se mantienen invariables.

Agradeciendo lo anterior, suscribe,

Lic. Carlos Andrés Araya Jiménez.
Coordinador, Sub-Área de Contratación Administrativa

Archivo

Klindor

9/2/2021

Kenia Lindor Monge

De: Gabriela Zuñiga <GabrielaZ@nipromed.com>
Enviado el: lunes, 08 de febrero de 2021 01:47 PM
Para: Kenia Lindor Monge
Asunto: Solicitud Modificación y Aclaración 2021CD-000006-2102
Datos adjuntos: SOLICITUD MODIFICACION Y ACLARACION.pdf;
WP_Evaluation_K2_K3_comparison_hematology_WE01
_Rev00.pdf

Buenas tardes,

1

Se adjunta oficio; favor confirmar recibido.

*Gabriela Zúñiga Zamora
Dept. de Ventas Institucionales
(506) 2239-1246 Ext. 506207 Phone
(506) 2239-4026 Fax
(506) 7013-6914 Celular
Correo: gabrielaZ@nipromed.com*

Dirección: Costado Este del Polideportivo San Antonio de Belén, Heredia.

2



Cedula Jurídica 3-012-389094
E-mail: juand@nipromed.com
gabrielaz@nipromed.com
sharonc@nipromed.com

08 de Febrero, 2021
NMCR-4201-2021

Señores
Caja Costarricense de Seguro Social
Hospital San Juan de Dios
Sub Área de Contratación Administrativa
Presente

Asunto: Solicitud de Modificación y Aclaración
Compra 2021CD-000006-2102
"Tubos al Vacío contenido EDTA de 64x10.25mm"

Estimados señores:

En referencia a la compra mencionada en el asunto, se solicita valorar la posibilidad de modificar y aclarar los siguientes puntos:

MODIFICACIONES:

- 1.** Se solicita que se permita que el tubo contenga **EDTA-K2 ó EDTA K3** como anticoagulante, ya que ambos anticoagulantes son adecuados para el uso en las pruebas de hematología y no presentan diferencias clínicamente significativas en los resultados (se adjunta estudio comparativo de tubos Vacutte con EDTA K2 y EDTA K3).
- 2.** Se amplíe las medidas del tubo, aceptando las modificaciones siguientes: "**...de 42 mm a 64 mm de largo (incluyendo la tapa) x 10.0 mm a 10.5 mm de ancho en la parte superior (incluyendo la tapa).**"
- 3.** Además, se solicita aceptar una **fecha de vencimiento de 9 meses** a partir de cada entrega en la bodega del Laboratorio Clínico del Hospital San Juan de Dios, porque debido al tiempo de tránsito del producto desde fábrica, esa corresponde a la fecha máxima de vencimiento con la que arriban los tubos a nuestro país. Asimismo, se solicita aceptar la entrega de una **carta de compromiso de reposición por vencimiento del producto en caso de no poder cumplir con el tiempo de expiración solicitado.**

ACLARACION:

- 1.** Aclarar la **cantidad de adaptadores de tamaño 13x75 mm** requeridos para la utilización de los tubos de forma automatizada.

Tel. (506)2239-1246 / Fax (506)2239-4026



Nipro Medical Costa Rica



<https://nipro.cr/v2/>

Heredia, Costa Rica



Cedula Jurídica 3-012-389094
E-mail: juand@nipromed.com
gabrielaz@nipromed.com
sharonc@nipromed.com

Agradeciendo su atención a la misma, me despido.

JUAN DIEGO
REYES ACUÑA
(FIRMA)

Firmado digitalmente por
JUAN DIEGO REYES ACUÑA
(FIRMA)
Fecha: 2021.02.08 13:42:17
-06'00'

Juan Diego Reyes Acuña
Representante Legal

Tel. (506)2239-1246 / Fax (506)2239-4026



niprocr



Nipro Medical Costa Rica



<https://nipro.cr/v2/>

Heredia, Costa Rica

Comparison of VACUETTE® K₂EDTA and VACUETTE® K₃EDTA Tubes

Background:

The VACUETTE® evacuated blood collection tubes are used for testing parameters in haematology. The tubes are available with interior coated spray-dried K₂EDTA (dipotassium ethylenediaminetetraacetic acid) or K₃EDTA (tripotassium ethylenediaminetetraacetic acid).

Both EDTA salts inhibit the coagulation of the blood specimen by binding Calcium (Ca²⁺), thus preserving the blood cells for test analyses.¹

The K₂EDTA and K₃EDTA additives preserve erythrocytes, leucocytes and thrombocytes up to 24 hours. The differential should be analyzed and the peripheral smear be made within 3 hours of specimen collection.²

Study Objective:

A clinical evaluation was carried out to compare the performance of the VACUETTE® K₂EDTA tube to the VACUETTE® K₃EDTA tube.

Study design:

The following tube types were used in this study:

| Sample ID | Description |
|-----------|--|
| A | VACUETTE® K ₂ EDTA 4 ml, spray dried (item No.: 454023) |
| B | VACUETTE® K ₃ EDTA 4 ml, spray dried (item No.: 454021) |

Blood was collected from forty-six normal and abnormal donors. The instructions for use² was followed. The order of draw was also randomized.

All salts of EDTA are hyperosmolar, which causes water to leave the cells and results in cell shrinkage. The higher the concentration of EDTA, the greater the osmotic withdrawal of water from the cells. It was therefore ensured that the tubes are filled-completely.

In addition, under-filling of the tubes also decreases the blood to additive ratio, resulting in cell shrinkage (reduction of the Mean Corpuscular Volume and an increase of the Mean Corpuscular Haemoglobin Concentration³). The K₃EDTA Tubes may be slightly more affected, because of the presence of the higher potassium-ion concentration.

Blood specimens were obtained using the institution's standard phlebotomy techniques. Immediately following blood collection, the tubes were gently inverted 8 to 10 times to ensure proper mixing of the blood and additive in the specimens.

Determination of the most common parameters (listed below) in hematology was performed using the Sysmex XE2100 Hematology Analyzer with accompanying reagents.

Specimens were analyzed as follows:

- 1) Seven donors were analyzed within 15 minutes after blood collection.
- 2) Fifteen donors were analyzed between 15-30 minutes after blood collection.
- 3) Twenty-four donors were analyzed between 30 minutes and 3 hours after blood collection.
- 4) All samples were reanalyzed 24 hours after blood collection

The tubes were stored at room temperature.

The results were checked for correctness. If an outlier was observed, an investigation was conducted and the test was repeated.

The evaluation of the results included directly measured and calculated parameters.^{4,5,6}

Directly measured parameters included Leukocytes, Erythrocytes, Haemoglobin, Hematocrit and Thrombocytes.

The calculated parameters included Mean Corpuscular Volume (MCV), Mean Corpuscular Haemoglobin (MCH) and Mean Corpuscular Haemoglobin Concentration (MCHC).

The differential parameters included Neutrophile Granulocytes, Lymphocytes, Monocytes, Eosinophile Granulocytes and Basophile Granulocytes.

Conclusion:

The VACUETTE® K₃EDTA tube demonstrated substantially equivalent performance to the VACUETTE® K₂EDTA tube. No clinically significant differences were observed.

References:

- (1) NCCLS. *Tubes and Additives for Venous Blood Specimen Collection; Approved Standard—Fifth Edition*. NCCLS document H1-A5 (ISBN 1-56238-519-4). NCCLS, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898 USA, 2003.
- (2) Gruber, H., *Product Manual: VACUETTE® Evacuated Blood Collection System- For In Vitro Diagnostic Use*. Rev.06. 2005, Kremsmünster, Austria: Greiner Bio-One GmbH.
- (3) Chen BH, Fong JF, Chiang CH, *Effect of different anticoagulant, underfilling of blood sample and storage stability on selected hemogram*. The Kaohsiung journal of medical sciences, 1999. 15(2): p. 87-93.
- (4) Sysmex XE-2100 Operator's Manual. 1999, 2003: Scientific Center Sysmex Corporation.
- (5) NCCLS. *Method Comparison and Bias Estimation Using Patient Samples; Approved Guideline—SecondEdition*. NCCLS document EP9-A2 (ISBN 1-56238-472-4). NCCLS, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898 USA, 2002.
- (6) *Richtlinie der Bundesärztekammer zur Qualitätssicherung quantitativer laboratoriumsmedizinischer Untersuchungen*, Bundesärztekammer (Arbeitsgemeinschaft der deutschen Ärztekammer). 2001, Rev. 2003.

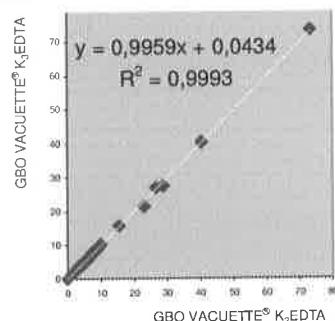
Results in detail:

Leucocytes (WBC)

Normal range: 4,0 – 9,0 [$10^3/\mu\text{L}$]

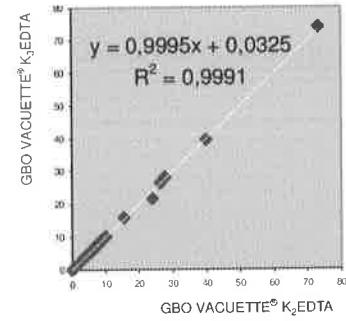
Measurement 0-3h after blood collection:

Regression WBC [$10^3/\mu\text{L}$]

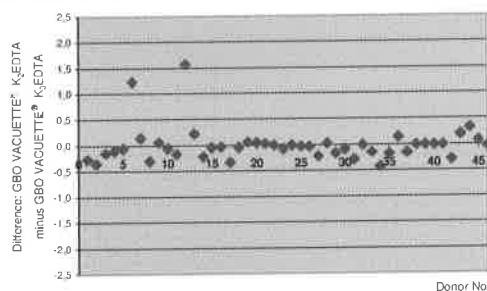


Measurement 24h after blood collection:

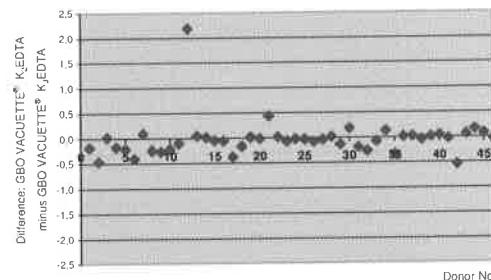
Regression WBC [$10^3/\mu\text{L}$]



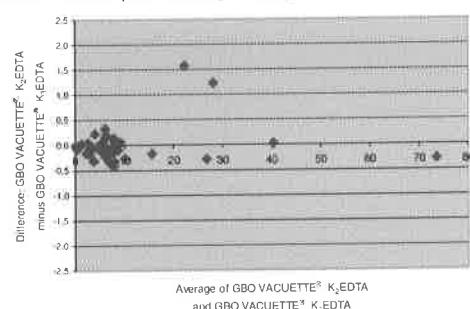
Deviation plot, y-axis WBC [$10^3/\mu\text{L}$]:



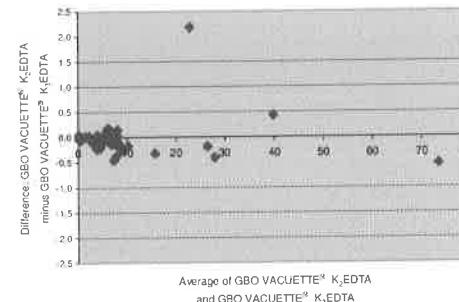
Deviation plot, y-axis WBC [$10^3/\mu\text{L}$]:



Bland-Altman plot WBC [$10^3/\mu\text{L}$]:



Bland-Altman plot WBC [$10^3/\mu\text{L}$]:



Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,871
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,614
Critical P= 0,05
No significance

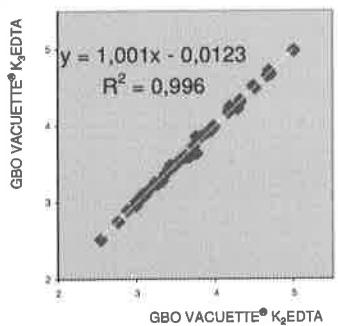
significance

Erythrocytes (RBC)

Normal range: 4,5 – 6,0 [$10^6/\mu\text{L}$] (male); 4,2 – 5,5 [$10^6/\mu\text{L}$] (female)

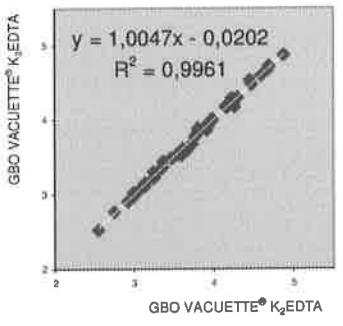
Measurement 0-3h after blood collection:

Regression RBC [$10^6/\mu\text{L}$]:

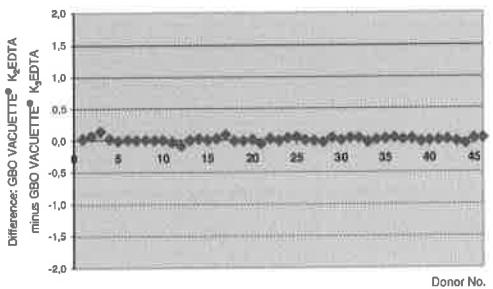


Measurement 24h after blood collection:

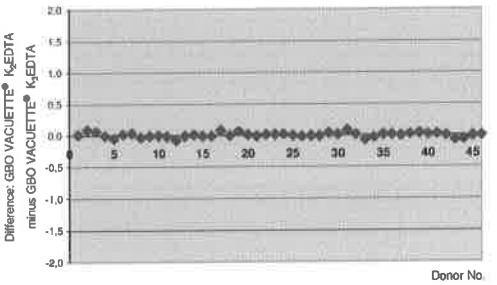
Regression RBC [$10^6/\mu\text{L}$]:



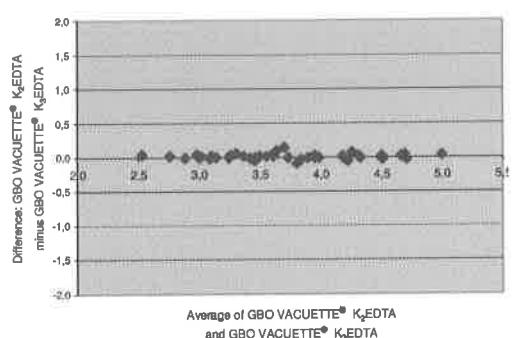
Deviation plot y-axis RBC [$10^6/\mu\text{L}$]:



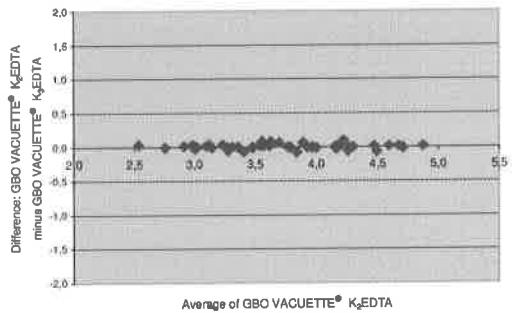
Deviation plot, y-axis RBC [$10^6/\mu\text{L}$]:



Bland-Altman plot RBC [$10^6/\mu\text{L}$]:



Bland-Altman plot RBC [$10^6/\mu\text{L}$]:



Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,119
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

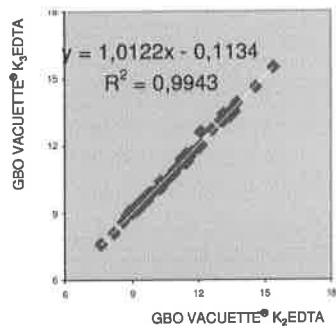
N=46
P-value= 0,598
Critical P= 0,05
No significance

Haemoglobin (HGB)

Normal range: 13,5 – 18,0 [g/dL] (male); 12 – 16,5 [g/dL] (female)

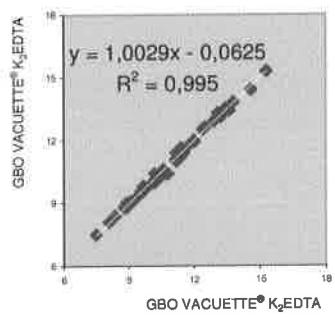
Measurement 0-3h after blood collection:

Regression HGB [g/L]:

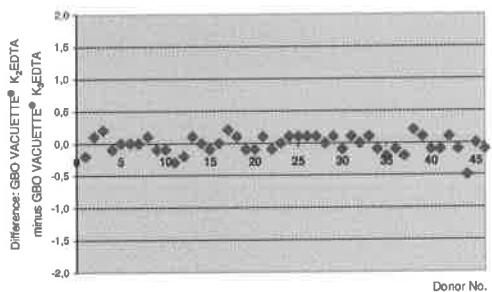


Measurement 24h after blood collection:

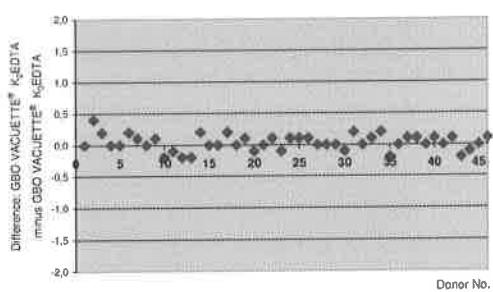
Regression HGB [g/L]:



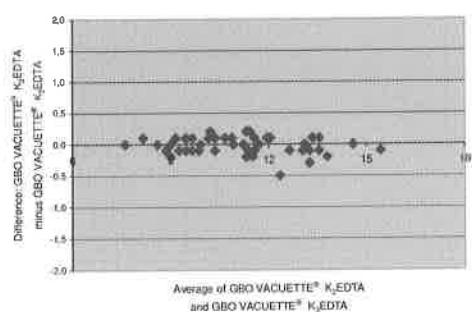
Deviation plot, y-axis HGB [g/L]:



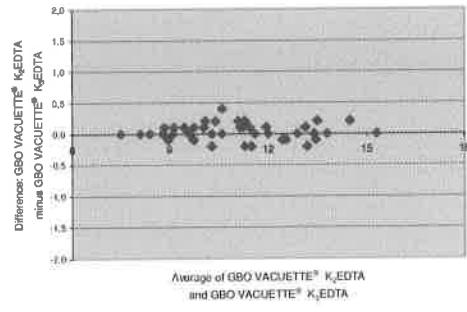
Deviation plot, y-axis HGB [g/L]:



Bland-Altman plot HGB [g/L]:



Bland-Altman plot HGB [g/L]:



Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,297
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

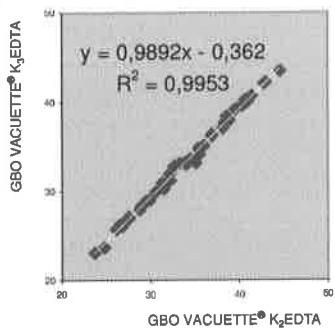
N=46
P-value= 0,114
Critical P= 0,05
No significance

Haematocrit (HCT)

Normal range: 40 – 52 [%] (male), 36 – 48 [%] (female)

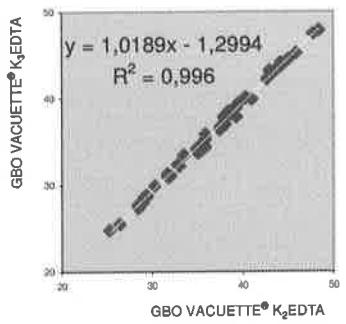
Measurement 0-3h after blood collection:

Regression HCT [%]:

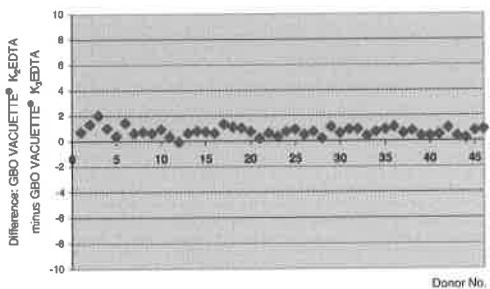


Measurement 24h after blood collection:

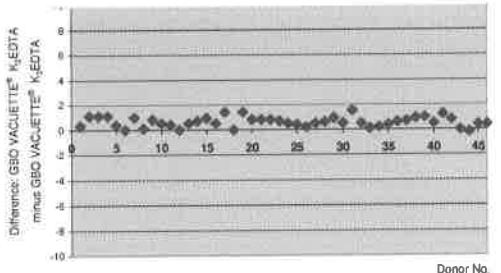
Regression HCT [%]:



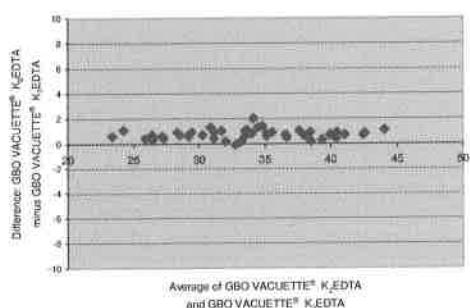
Deviation plot y-axis HCT [%]:



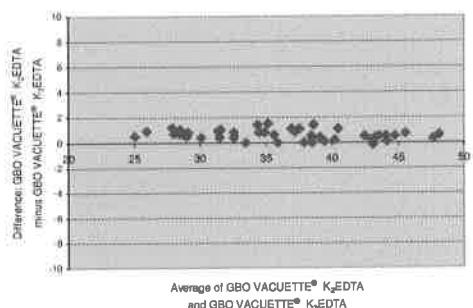
Deviation plot, y-axis HCT [%]:



Bland-Altman plot HCT [%]:



Bland-Altman plot HCT [%]:



Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,000
Critical P= 0,05
Significant

Result paired two tailed t-test at a confidence level of 95%:

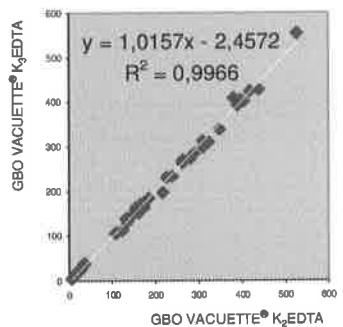
N=46
P-value= 0,000
Critical P= 0,05
Significant

Thrombocytes (PLT)

Normal range: 130 – 440 [$10^6/\mu\text{L}$]

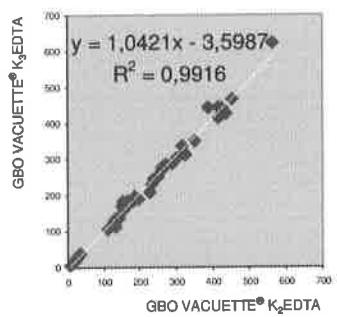
Measurement 0-3h after blood collection:

Regression PLT [$10^6/\mu\text{L}$]:

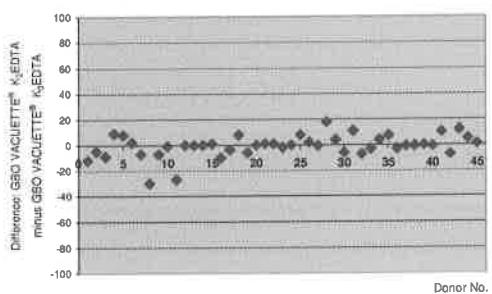


Measurement 24h after blood collection:

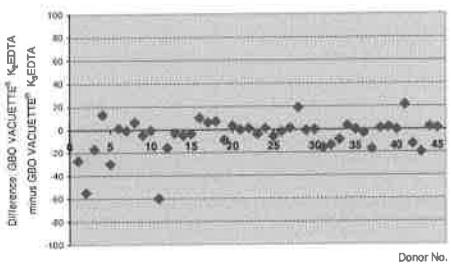
Regression PLT [$10^6/\mu\text{L}$]:



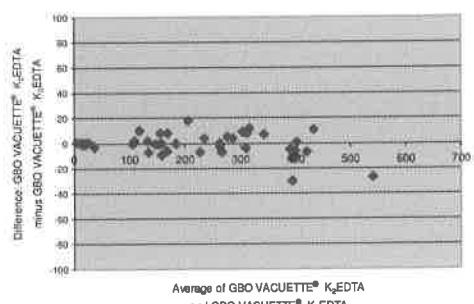
Deviation plot y-axis PLT [$10^6/\mu\text{L}$]:



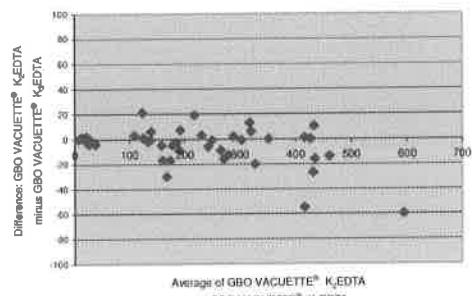
Deviation plot, y-axis PLT [$10^6/\mu\text{L}$]:



Bland-Altman plot PLT [$10^6/\mu\text{L}$]:



Bland-Altman plot PLT [$10^6/\mu\text{L}$]:



Result paired two tailed t-test at a confidence level of 95%:

N=45
P-value= 0,307
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

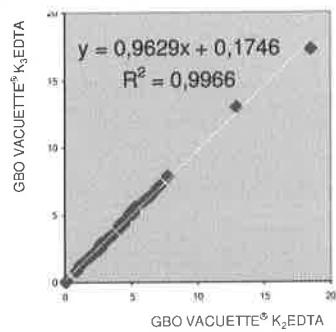
N=45
P-value= 0,024
Critical P= 0,05
Significant

Neutrophile Granulocytes (NEU)

Normal range: 2,2 – 6,2 [$10^3/\mu\text{L}$]

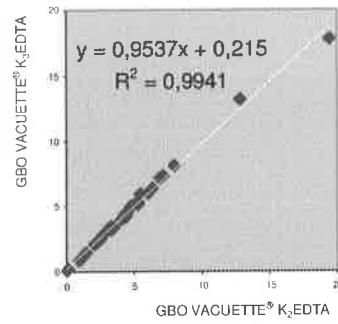
Measurement 0-3h after blood collection:

Regression NEU [$10^3/\mu\text{L}$]:

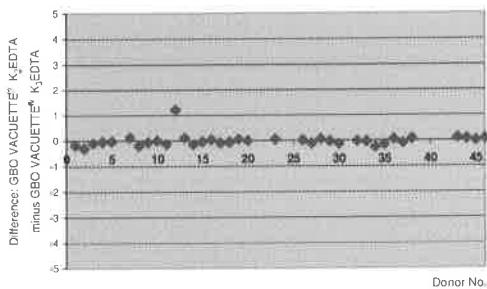


Measurement 24h after blood collection:

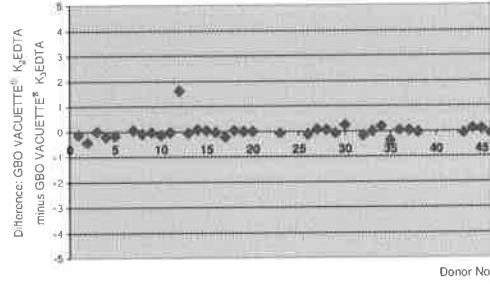
Regression NEU [$10^3/\mu\text{L}$]:



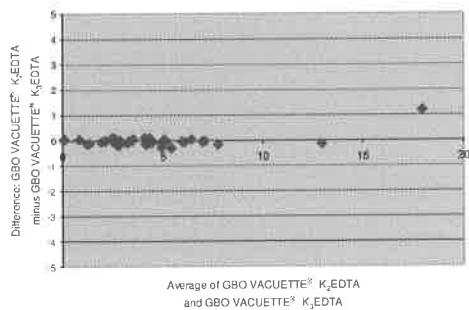
Deviation plot y-axis NEU [$10^3/\mu\text{L}$]:



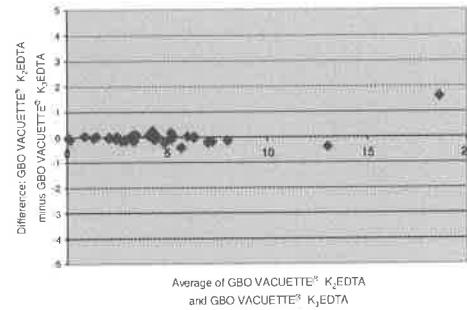
Deviation plot, y-axis NEU [$10^3/\mu\text{L}$]:



Bland-Altman plot NEU [$10^3/\mu\text{L}$]:



Bland-Altman plot NEU [$10^3/\mu\text{L}$]:



Result paired two tailed t-test at a confidence level of 95%:

N=36
P-value= 0,786
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

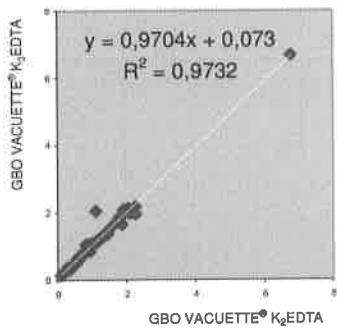
N=36
P-value= 0,906
Critical P= 0,05
No significance

Lymphocytes (LYMPH)

Normal range: 1,0 – 4,0 [$10^3/\mu\text{L}$]

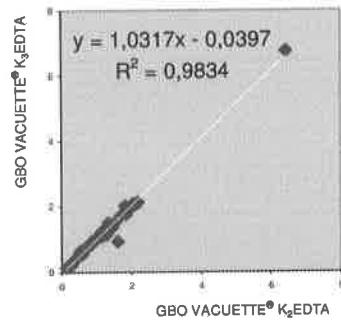
Measurement 0-3h after blood collection:

Regression LYMPH [$10^3/\mu\text{L}$]:

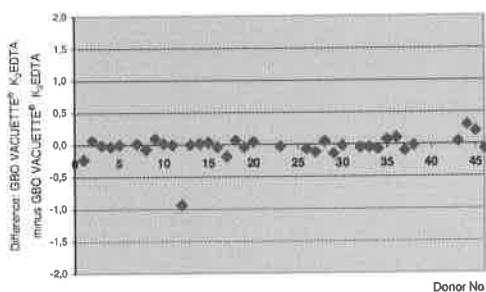


Measurement 24h after blood collection:

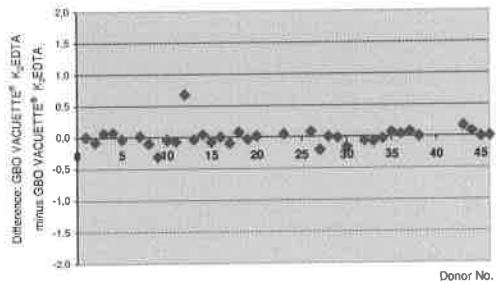
Regression LYMPH [$10^3/\mu\text{L}$]:



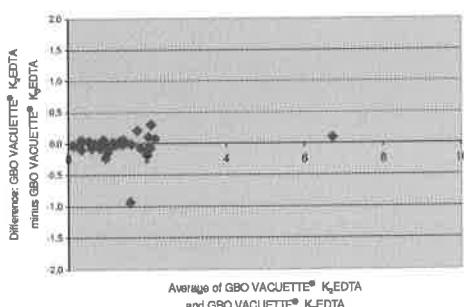
Deviation plot y-axis LYMPH [$10^3/\mu\text{L}$]:



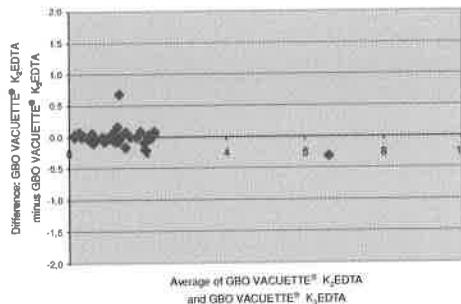
Deviation plot, y-axis LYMPH [$10^3/\mu\text{L}$]:



Bland-Altman plot LYMPH [$10^3/\mu\text{L}$]:



Bland-Altman plot LYMPH [$10^3/\mu\text{L}$]:



Result paired two tailed t-test at a confidence level of 95%:

N=36
P-value= 0,259
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

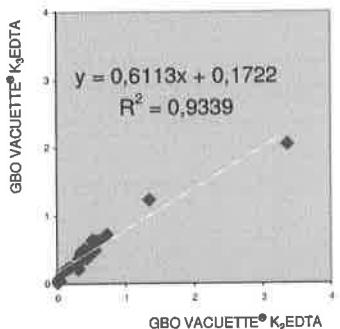
N=36
P-value= 0,946
Critical P= 0,05
No significance

Monocytes (MONO)

Normal range: 2 – 11 [$10^3/\mu\text{L}$]

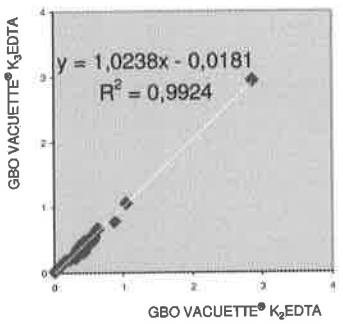
Measurement 0-3h after blood collection:

Regression MONO [$10^3/\mu\text{L}$]:

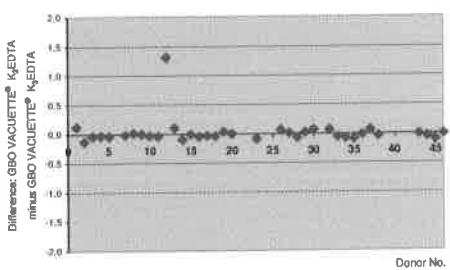


Measurement 24h after blood collection:

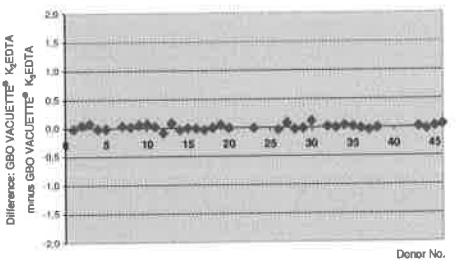
Regression MONO [$10^3/\mu\text{L}$]:



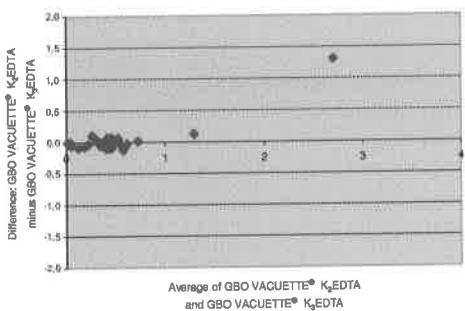
Deviation plot y-axis MONO [$10^3/\mu\text{L}$]:



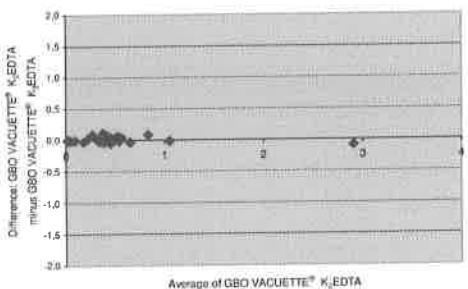
Deviation plot, y-axis MONO [$10^3/\mu\text{L}$]:



Bland-Altman plot MONO [$10^3/\mu\text{L}$]:



Bland-Altman plot MONO [$10^3/\mu\text{L}$]:



Result paired two tailed t-test at a confidence level of 95%:

N=36
P-value= 0,639
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

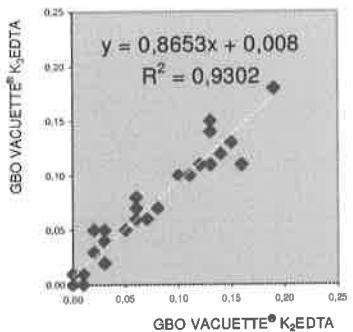
N=36
P-value= 0,352
Critical P= 0,05
No significance

Eosinophile Granulocytes

Normal range: 0 – 4 [$10^3/\mu\text{L}$]

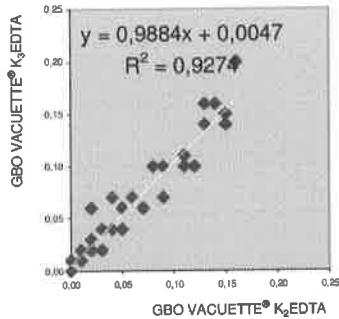
Measurement 0-3h after blood collection:

Regression EO [$10^3/\mu\text{L}$]:

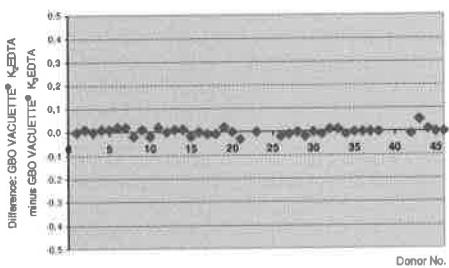


Measurement 24h after blood collection:

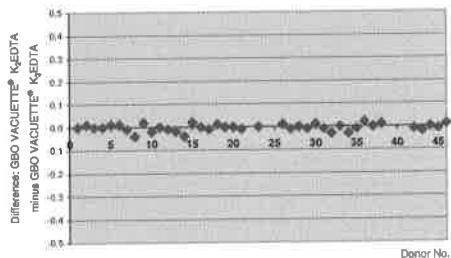
Regression EO [$10^3/\mu\text{L}$]:



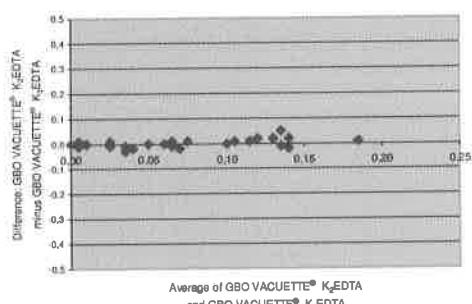
Deviation plot y-axis EO [$10^3/\mu\text{L}$]:



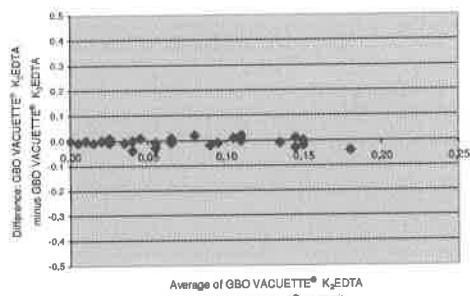
Deviation plot, y-axis EO [$10^3/\mu\text{L}$]:



Bland-Altman plot EO [$10^3/\mu\text{L}$]:



Bland-Altman plot EO [$10^3/\mu\text{L}$]:



Result paired two tailed t-test at a confidence level of 95%:

N=40
P-value= 0,749
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

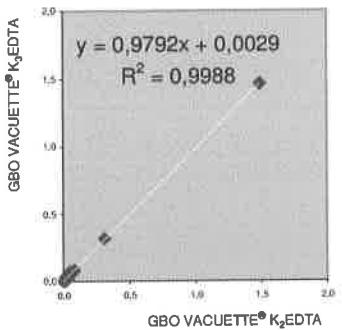
N=40
P-value= 0,096
Critical P= 0,05
No significance

Basophile Granulocytes (BASO)

Normal range: 0 – 1 [$10^3/\mu\text{L}$]

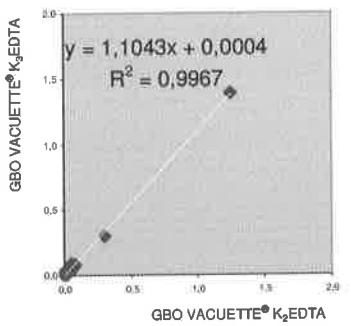
Measurement 0-3h after blood collection:

Regression BASO [$10^3/\mu\text{L}$]:

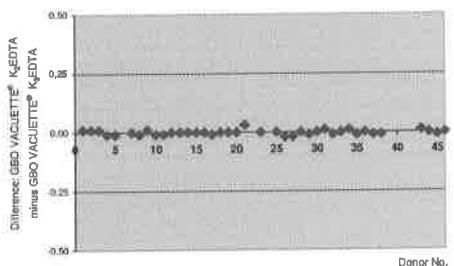


Measurement 24h after blood collection:

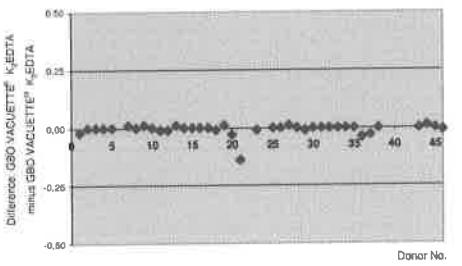
Regression BASO [$10^3/\mu\text{L}$]:



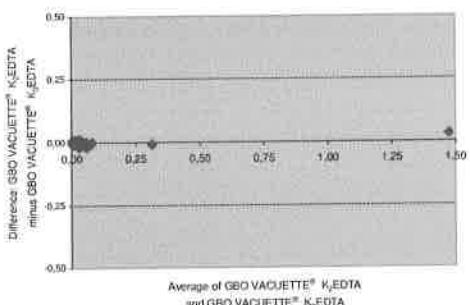
Deviation plot y-axis BASO [$10^3/\mu\text{L}$]:



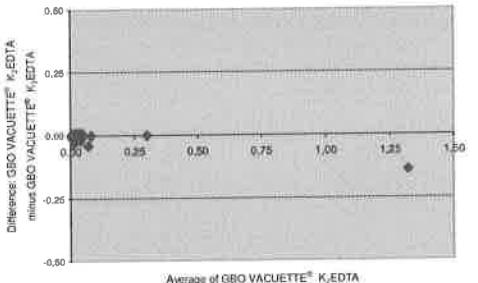
Deviation plot, y-axis BASO [$10^3/\mu\text{L}$]:



Bland-Altman plot BASO [$10^3/\mu\text{L}$]:



Bland-Altman plot BASO [$10^3/\mu\text{L}$]:



Result paired two tailed t-test at a confidence level of 95%:

N=39
P-value= 0,324
Critical P= 0,05
No significance

Result paired two tailed t-test at a confidence level of 95%:

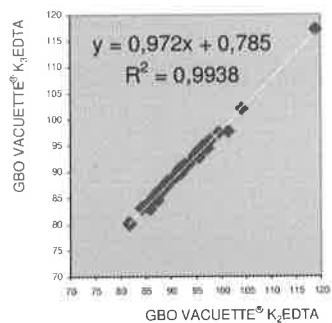
N=39
P-value= 0,098
Critical P= 0,05
No significance

Mean Corpuscular Volume (MCV)

Normal range: 80- 99 [fL]

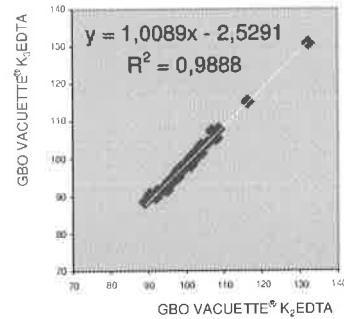
Measurement 0-3h after blood collection:

Regression MVC [fL]:

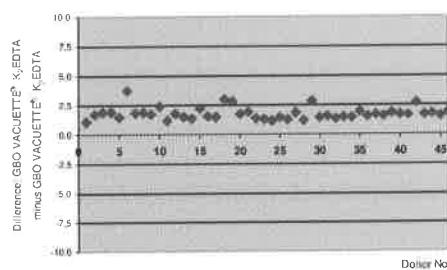


Measurement 24h after blood collection:

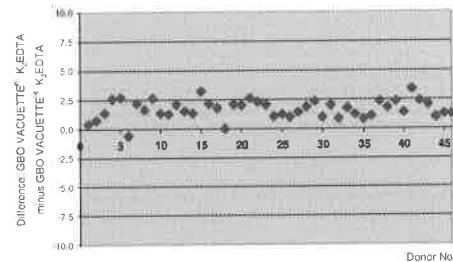
Regression MCV [fL]:



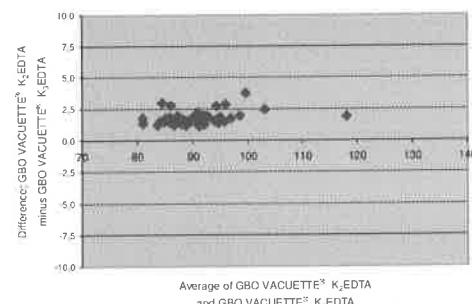
Deviation plot y-axis MCV [fL]:



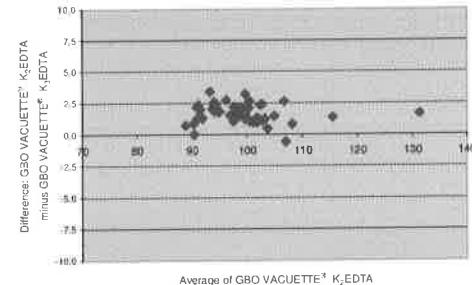
Deviation plot, y-axis MCV [fL]:



Bland-Altman plot MCV [fL]:



Bland-Altman plot MCV [fL]:



Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,000
Critical P= 0,05
Significant

Result paired two tailed t-test at a confidence level of 95%:

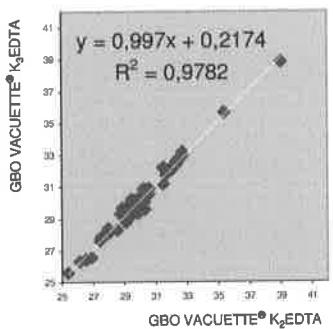
N=46
P-value= 0,000
Critical P= 0,05
Significant

Mean Corpuscular Haemoglobin (MCH)

Normal range: 26 – 34 [pg]

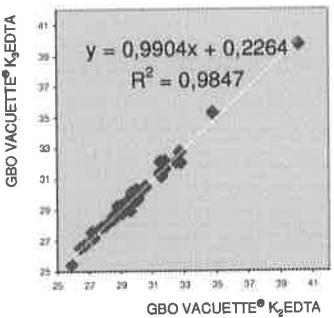
Measurement 0-3h after blood collection:

Regression MCH [pg]:

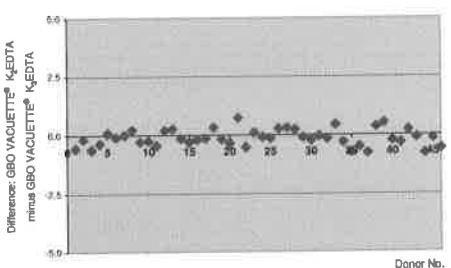


Measurement 24h after blood collection:

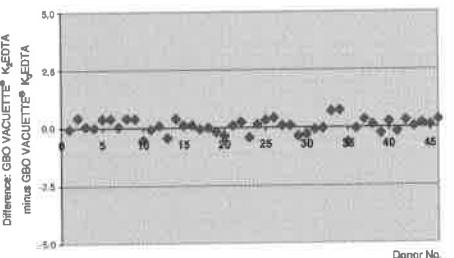
Regression MCH [pg]:



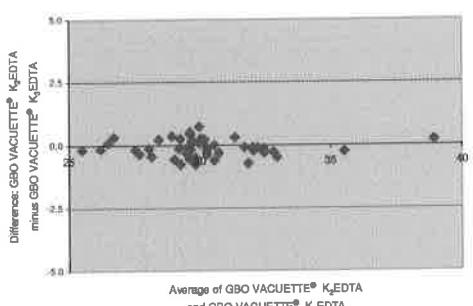
Deviation plot y-axis MCH [pg]:



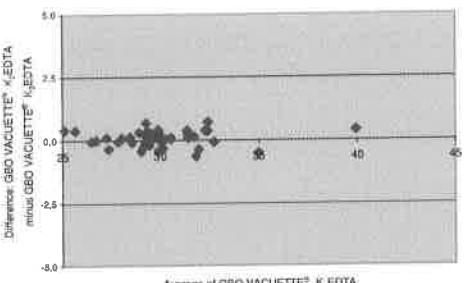
Deviation plot, y-axis MCH [pg]:



Bland-Altman plot MCH [pg]:



Bland-Altman plot MCH [pg]:



Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,017
Critical P= 0,05
Significant

Result paired two tailed t-test at a confidence level of 95%:

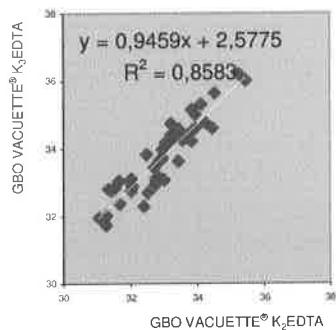
N=46
P-value= 0,186
Critical P= 0,05
No significance

Mean Corpuscular Haemoglobin Concentration (MCHC)

Normal range: 32 – 46 [g/dL]

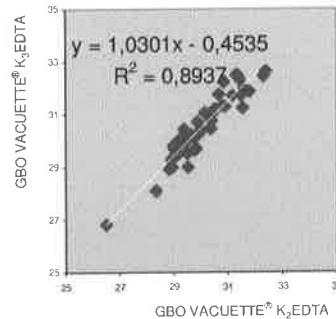
Measurement 0-3h after blood collection:

Regression MCHC [g/dL]:

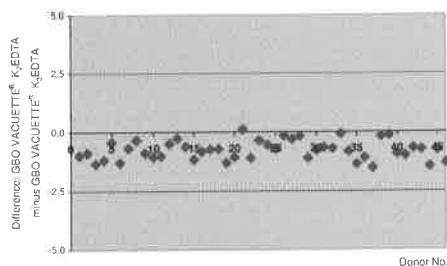


Measurement 24h after blood collection:

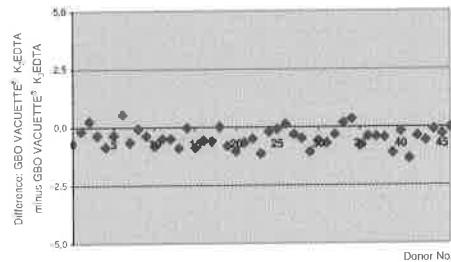
Regression MCHC [g/dL]:



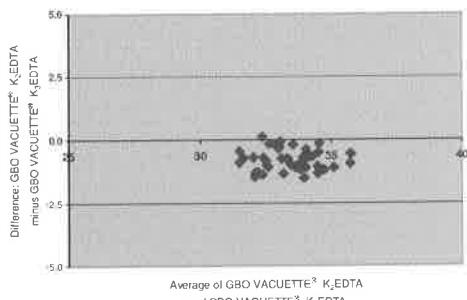
Deviation plot y-ayis MCHC [g/dL]:



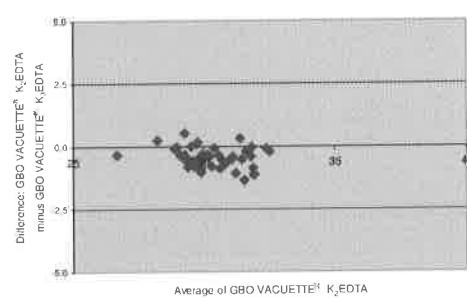
Deviation plot, y-ayis MCHC [g/dL]:



Bland-Altman plot MCHC [g/dL]:



Bland-Altman plot MCHC [g/dL]:



Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,000
Critical P= 0,05
Significant

Result paired two tailed t-test at a confidence level of 95%:

N=46
P-value= 0,000
Critical P= 0,05
Significant

Kenia Lindor Monge

De: Geovanny Gerardo Zeledón Zamora
Enviado el: martes, 09 de febrero de 2021 08:25 AM
Para: Kenia Lindor Monge
CC: María Luisa Jiménez Artavia; Diego Andrey Molina Leiva
Asunto: Solicitud Modificación y Aclaración 2021CD-000006-2102
Datos adjuntos: H.E 10-2021 Solicitud de Modificacion y Aclaracion
Compra 2021CD-000006-2102 Tubos al Vacio contenido
EDTA de 64X10.25 mm.pdf

1

Buenos días, adjunto oficio H.E. 10-2021, en referencia a Solicitud de Modificación y Aclaración Compra 2021CD-000006-2102.

Favor Confirmar Recibido

Dr. Geovanny Zeledón Zamora
Jefe a.i. División Hematología
Laboratorio Clínico
Hospital San Juan de Dios
Teléfono: 25478375
Correo: ggzeledon@ccss.sa.cr

2

H.E 10-2021
Martes 09 de febrero del 2021

Kenia Lindor Monge
Área de Gestión de Bienes y Servicios
Hospital San Juan de Dios

**Asunto: Solicitud de Modificación y Aclaración Compra 2021CD-000006-2102 Tubos
al Vacío contenido EDTA de 64X10.25mm**

Estimada Kenia:

En referencia a la Nota NMCR-4201-2021, del 8 de febrero del 2021, del señor Juan Diego Reyes Acuña, me permito indicarle que se valoran las modificaciones para que queden de la siguiente forma:

1. Modificar Tubos con K2 EDTA a **tubos que contengan EDTA-K2 ó EDTA-K3 como anticoagulante.**
2. Tubos al vacío de 42 mm a 64 mm de largo x 10.0 mm a 10.5 mm de ancho en la parte superior.
3. Vencimiento: el reactivo debe contar con un vencimiento de 9 meses a partir de cada entrega en la bodega del Laboratorio Clínico del Hospital San Juan de Dios. En caso de no poder cumplir con el tiempo de expiración solicitado, se acepta carta de compromiso de reposición por vencimiento del producto por parte de la empresa adjudicataria.

Aclaración:

En cuanto a la aclaración solicitada me permito indicarle que la cantidad de adaptadores de tamaño 13x75 mm mínima requerida para la utilización de los tubos de forma automatizada es de **400 adaptadores**.

Sin más por el momento, me despido,

GEOVANNY
GERARDO
ZELEDON
ZAMORA (FIRMA)

Firmado digitalmente
por GEOVANNY
GERARDO ZELEDON
ZAMORA (FIRMA)
Fecha: 2021.02.09
08:16:32 -06'00'

Dr. Geovanny Zeledón Zamora
Jefe a.i. División Hematología
Laboratorio Clínico

cc . Licda Marla Luisa Jiménez, Asistente Administrativa
Archivo