CE

CYPRESS DIAGNOSTICS

CY009

English

CYANSmart

Application Sheets

For a clear and precise diagnose

ISO 13485-2016

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Layout 20181024

DIRECTIONS FOR USE

AUTOMATION

CYANSmart

CLINICAL CHEMISTRY

Cypress Diagnostics: Nijverheidsstraat 8 • 2235 Hulshout • Belgium
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Page	Test	Program Name
1	α-Amylase	AAMY
2	Acid Phosphatase Total	ACPt
3	Acid Phosphatase (Non) Prostatic	ACP(n)p
4	Albumin	ALB
5	Alkaline Phosphatase (ALP) Liquid	ALPL
6 + 7-8	Bilirubin Direct + Scheme	BILD
9 + 10-11	Bilirubin Total + Scheme	BILT
12	Calcium	CaAR
13	Chloride	CL
14	Cholesterol Liquid (new)	CHOLLn
15 + 16	HDL Cholesterol Direct + Scheme	HDLd
17 + 18	LDL Cholesterol Direct + Scheme	LDLd
19	Creatine Kinase MB	CKMBL
20	Creatine Kinase NAC Liquid	CKNACL
21	Creatinine	CRE
22	G6-PDH	G6PDH
23	Glucose Liquid	GLUCLn
24	γ–GT Liquid	GGTL
25	GOT (AST) Liquid	GOTL
26	GPT (ALT) Liquid	GPTL
27	HbA1c	HbA1c
28	Hemoglobin	HGB
29	Iron	IRON
30	LDH Liquid	LDHL
31	Lipase	LIPASE
32	Magnesium	MgXB
33	Phosphorus	PHOSPH
34	Potassium	POT
35	Sodium	SOD
36	Total Protein	TP
37	Total Protein in Urine and CSF	TPU
38	Triglycerides Liquid (new)	TRIGLn
39	Urea	UREA
40	Urea Liquid	UREAL
41	Urea Liquid	UREALn
42	Uric Acid Liquid	UAL
43	LIN340	LIN340
44	LIN510	LIN510

REF	**HBE03**
VOL	20 x 2 mL

α-Amylase

CNPG3. Colorimetric. Kinetic

REAGENT PREPARATION AND STABILITY

The Amylase reagent is ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
After opening, the reagent is stable for 60 days when properly capped immediately after each opening and stored at 2-8 °C. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 405 nm ≥ 0,40, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. Preprogrammed factors can only be used when quality controls are within the defined ranges. Otherwise, use the Biochemistry Calibrator (**HBC03**) for calibration.Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma
remove from cells as soon as possible. It is recommended to use heparin as anticoagulant.
Stability: 1 month at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank Note 1	1,0 mL Reagent
For Sample/(Calibrator) Note 2,4	20 µL Sample/(Calibrator) + 1,0 mL Reagent

Prepare, mix and measure **one sample at a time**. Aspirate the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	AAMY		**Blank Low:**	0,0000 Note 1	
Program Method:	Kinetic		**Blank High:**	0,4000 Note 1	
Main Filter:	405	nm	**Normal Low:**	28,0000	U/L
Sub Filter:	None	nm	**Normal High:**	90,0000 Note 4	U/L
Program Unit:	U/L		**Num of STD:**	0 Note 2	
Aspiration volume:	0800	µL	**CONC:**	0,0000 Note 2	U/L
Delay Time:	120	sec	**Factor:**	3954,0000 Note 2,4	
Test time:	090	sec	**Control N min:**	Enter value Note 3	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	U/L
Linearity Min:	0,2439	U/L	**Control P min:**	Enter value Note 3	U/L
Linearity Max:	2200,0000	U/L	**Control P max:**	Enter value Note 3	U/L
Blank:	Reagent Note 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,2439 U/L (detection limit) to 2200 U/L (linearity limit). If the obtained results are greater than 2200 U/L, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum or plasma samples.

2023-06 (5.0) - Replaces all previous versions

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Acid Phosphatase Total

REF	HBE01
VOL	18 x 2 mL
Standard	-

α-Naphtyl phosphate.
Colorimetric. Kinetic. Hillman Method

REAGENT PREPARATION AND STABILITY

R3 and R4 are ready to use.
Dissolve one tablet R2 substrate in 2mL of R1 buffer. Cap and mix gently to dissolve the contents. The stability of working reagent is 2 days at 2-8 °C or 6 hours at room temperature.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Do not use the tablets if they appear to be broken. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 405 nm ≥ 0,44, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. Alternatively, you can use the **Biochemistry Calibrator Specific (HBC03-S)** for calibration.Note 2
Control sera are recommended to monitor the performance of assay procedures. **Use Biochemistry Normal and Pathological Controls Specific (HBC01-S, HBC02-S).** Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Clear serum, separated from the clot as soon as possible. Do not use plasma or hemolytic serum. Acid phosphatase is extremely labile, stabilize by adding 50 µL of acetic acid (R4) per mL of the sample. Stability: 7 days at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For BlankNote 1	1,00 mL Working reagent (R1 + R2)
For Sample/(Calibrator)Note 2	100 µL Sample/(Calibrator) + 1,00 mL Working reagent (R1 + R2)

Prepare, mix and measure **one sample at a time**. **Aspirate** the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	ACPt		**Blank Low:**	0,0000Note 1	
Program Method:	Kinetic		**Blank High:**	0,4400Note 1	
Main Filter:	405	nm	**Normal Low:**	0,1300	U/L
Sub Filter:	None	nm	**Normal High:**	5,4000	U/L
Program Unit:	U/L		**Num of STD:**	0Note 2	
Aspiration volume:	0800	µL	**CONC:**	0,0000Note 2	U/L
Delay Time:	300	sec	**Factor:**	750,0000Note 2	
Test time:	090	sec	**Control N min:**	Enter valueNote 3	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter valueNote 3	U/L
Linearity Min:	0,0000	U/L	**Control P min:**	Enter valueNote 3	U/L
Linearity Max:	150,0000	U/L	**Control P max:**	Enter valueNote 3	U/L
Blank:	ReagentNote 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0 U/L (detection limit) to 150 U/L (linearity limit). If the obtained results are greater than 150 U/L, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Calibration by means of a Factor. Alternatively, you can use the **Biochemistry Calibrator Specific (HBC03-S)** for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03-S).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. To obtain a value for Prostatic Acid Phosphatase (ACPp), you can calculate the ratio: ACPp = ACPt – ACPnp.

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REF	HBE01
VOL	18 x 2 mL
Standard	-

Acid Phosphatase (Non) Prostatic

α-Naphtyl phosphate.
Colorimetric. Kinetic. Hillman Method

REAGENT PREPARATION AND STABILITY

R3 and R4 are ready to use.
Dissolve one tablet R2 substrate in 2mL of R1 buffer. Cap and mix gently to dissolve the contents. The stability of working reagent is 2 days at 2-8 °C or 6 hours at room temperature.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Do not use the tablets if they appear to be broken. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 405 nm ≥ 0,44, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. Alternatively, you can use the Biochemistry Calibrator Specific **(HBC03-S)** for calibration.Note 2
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls Specific **(HBC01-S, HBC02-S)**.Note 3 Prepare and measure these controls the same as samples. If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Clear serum, separated from the clot as soon as possible. Do not use plasma or hemolytic serum. Acid phosphatase is extremely labile, stabilize by adding 50 µL of acetic acid (R4) per mL of the sample. Stability: 7 days at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For BlankNote 1	1,00 mL Working reagent (R1 + R2) + 10 µL Reagent 3
For Sample/(Calibrator)Note 2	100 µL Sample/(Calibrator) + 1,00 mL Working reagent (R1 + R2) + 10 µL Reagent 3

Prepare, mix and measure **one sample at a time**. **Aspirate** the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	ACPnp		**Blank Low:**	0,0000Note 1	
Program Method:	Kinetic		**Blank High:**	0,4400Note 1	
Main Filter:	405	nm	**Normal Low:**	0,1300	U/L
Sub Filter:	None	nm	**Normal High:**	5,4000	U/L
Program Unit:	U/L		**Num of STD:**	0Note 2	
Aspiration volume:	0800	µL	**CONC:**	0,0000Note 2	U/L
Delay Time:	300	sec	**Factor:**	750,0000Note 2	
Test time:	090	sec	**Control N min:**	Enter valueNote 3	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter valueNote 3	U/L
Linearity Min:	0,0000	U/L	**Control P min:**	Enter valueNote 3	U/L
Linearity Max:	150,0000	U/L	**Control P max:**	Enter valueNote 3	U/L
Blank:	ReagentNote 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0 U/L (detection limit) to 150 U/L (linearity limit). If the obtained results are greater than 150 U/L, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Calibration by means of a Factor. Alternatively, you can use the Biochemistry Calibrator **Specific (HBC03-S) for** calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with **HBC03-S**).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. To obtain a value for Prostatic Acid Phosphatase (ACPp), you can calculate the ratio: ACPp = ACPt – ACPnp.

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REF	HB0010	HB0010M
VOL	2 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	-

Albumin

Bromocresol Green. Colorimetric

REAGENT PREPARATION AND STABILITY

Reagent and standard are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 25 °C.
Once open, the standard is stable up to 3 months.
Do not exceed the temperature of 25 °C during storage. The reagent should be a clear, yellow-green solution. If turbidity or precipitation has occurred or if blank absorbance at 620 nm ≥ 0,40, the reagent should be discarded.[Note 1]

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. [Note 2] Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration.
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). [Note 3] Prepare and measure these controls the same as samples. If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma , free of hemolysis. Stability 1 month at 2 - 8 °C or 1 week at 15 - 25 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL Reagent
For Standard[Note 2]	5 µL Standard + 1 mL Reagent
For Sample	5 µL Sample + 1 mL Reagent

You can prepare several samples simultaneously. Mix and incubate for 10 minutes at room temperature. After the incubation time, aspirate and measure the samples within 1 hour after preparation.

PROGRAM SETUP

Program Name:	ALB		**Blank Low:**	0,0000[Note 1]	
Program Method:	End Point		**Blank High:**	0,4000[Note 1]	
Main Filter:	620	nm	**Normal Low:**	3,5000	g/dL
Sub Filter:	None	nm	**Normal High:**	5,0000	g/dL
Program Unit:	g/dL		**Num of STD:**	1[Note 2]	
Aspiration volume:	0800	µL	**CONC:**	value: see vial[Note 2]	g/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value[Note 3]	g/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 3]	g/dL
Linearity Min:	0,0380	g/dL	**Control P min:**	Enter value[Note 3]	g/dL
Linearity Max:	5,8000	g/dL	**Control P max:**	Enter value[Note 3]	g/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,038 g/dL (detection limit) to 5,8 g/dL (linearity limit). If the obtained results are greater than 5,8 g/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HBE12
VOL	60 + 15 mL
Standard	-

Alkaline Phosphatase

IFCC. Colorimetric. Kinetic

REAGENT PREPARATION AND STABILITY

Mix 4 volumes of R1 (buffer) with 1 volume of R2 (substrate). The stability of working reagent is 21 days at 2-8°C or 5 days at room temperature (15-25°C).
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8°C.
Do not freeze the reagents.
The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 405 nm > 1,50, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. Note 2 Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration.
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum or heparinized plasma. Use non-hemolyzed serum, separated from the cloth as soon as possible. Stability: 3 days at 2-8°C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1,00 mL Working reagent (R1 + R2)
For Sample/(Calibrator)Note 2	20 µL Sample/(Calibrator) + 1,00 mL Working reagent (R1 + R2)

Prepare, mix and measure **one sample at a time.** Aspirate the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks: "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	ALPL		**Blank Low:**	0,0000Note 1	
Program Method:	Kinetic		**Blank High:**	1,5000Note 1	
Main Filter:	405	nm	**Normal Low:**	26,0000	U/L
Sub Filter:	None	nm	**Normal High:**	117,0000	U/L
Program Unit:	U/L		**Num of STD:**	0Note 2	
Aspiration volume:	0800	µL	**CONC:**	0,0000Note 2	U/L
Delay Time:	060	sec	**Factor:**	2764,0000Note 2	
Test time:	090	sec	**Control N min:**	Enter valueNote 3	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter valueNote 3	U/L
Linearity Min:	1,3070	U/L	**Control P min:**	Enter valueNote 3	U/L
Linearity Max:	1400,0000	U/L	**Control P max:**	Enter valueNote 3	U/L
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 1,307 U/L (detection limit) to 1400 U/L (linearity limit). If the obtained results are greater than 1400 U/L, dilute the sample 1:10 with saline solution, repeat the determination, and multiply the result by factor 10.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Calibration by means of a Factor. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HB0260	HB0020	HB0020A
VOL	2 x 125 mL	1 x 125 mL	4 x 125 mL
Standard	-	-	-

Bilirubin Direct

DMSO. Colorimetric

REAGENT PREPARATION AND STABILITY

All reagents are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-25 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred, if color development has occurred in reagent N, or if blank absorbance at 546 nm ≥ 0,10 the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor, only when quality controls are within the defined ranges. Otherwise, use the Biochemistry Calibrator (**HBC03**) for calibration. Use the value indicated on the insert 'with sample blank'.Note 2
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum or plasma, free of hemolysis. Store protected from direct light. Stability: 4 days at 2-8 °C and 2 months at -20 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature. Protect samples from direct sunlight.
Then, pipette into a test tube:

For Blank	750 µL Reagent D
For Sample/Cal BlankNote 2	100 µL Sample/Calibrator + 750 µL Reagent D
For Sample/CalNote 2	100 µL Sample/Calibrator + 25 µL Reagent N + 750 µL Reagent D

Thus, for every sample, you need to prepare 2 test tubes: one for measuring the sample blank (background coloration) and one for measuring the real sample coloration. Add Reagent N only to the second tube. Add Reagent D last, mix and incubate for exactly 5 minutes at room temperature. Aspirate the mixture in the instrument, exactly 5 minutes after addition of the Reagent D.
Use the illustrations on the next page for guidance to perform this test in a time-efficient way. Watch our Bilirubin video: https://diagnostics.be/product/hb0260

PROGRAM SETUP

Program Name:	BILD		**Blank Low:**	0,0000Note 1	
Program Method:	End Point		**Blank High:**	0,1000Note 1	
Main Filter:	546	nm	**Normal Low:**	0,0600	mg/dL
Sub Filter:	None	nm	**Normal High:**	0,2500	mg/dL
Program Unit:	mg/dL		**Num of STD:**	0Note 2	
Aspiration volume:	0550	µL	**CONC:**	0,0000Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	19,0000Note 2	
Test time:	003	sec	**Control N min:**	Enter valueNote 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter valueNote 3	mg/dL
Linearity Min:	0,0600	mg/dL	**Control P min:**	Enter valueNote 3	mg/dL
Linearity Max:	20,0000	mg/dL	**Control P max:**	Enter valueNote 3	mg/dL
Blank:	SerumNote 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,06 mg/dL (detection limit) to 20 mg/dL (linearity limit). If the obtained results are greater than 20 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. The Blank method programmed is Serum! Pay attention, this determines the calculation of the results, not the blank aspiration!
   - Aspirate distilled water to adjust the instrument to zero (AD value)
   - "**Test Blank**" → "yes" and aspirate **Reagent D** (blank)
   - In the standard/sample menu,
     a. "Aspirate Serum**"** = Standard/Sample Blank.
     b. "Aspirate Standard/Sample" = Standard/Sample (including 25 µL of RN).
2. Calibration by means of a Factor, only when quality controls are within the defined ranges. Otherwise, use the Biochemistry Calibrator (**HBC03**) for calibration. Use the value indicated on the insert 'with sample blank'. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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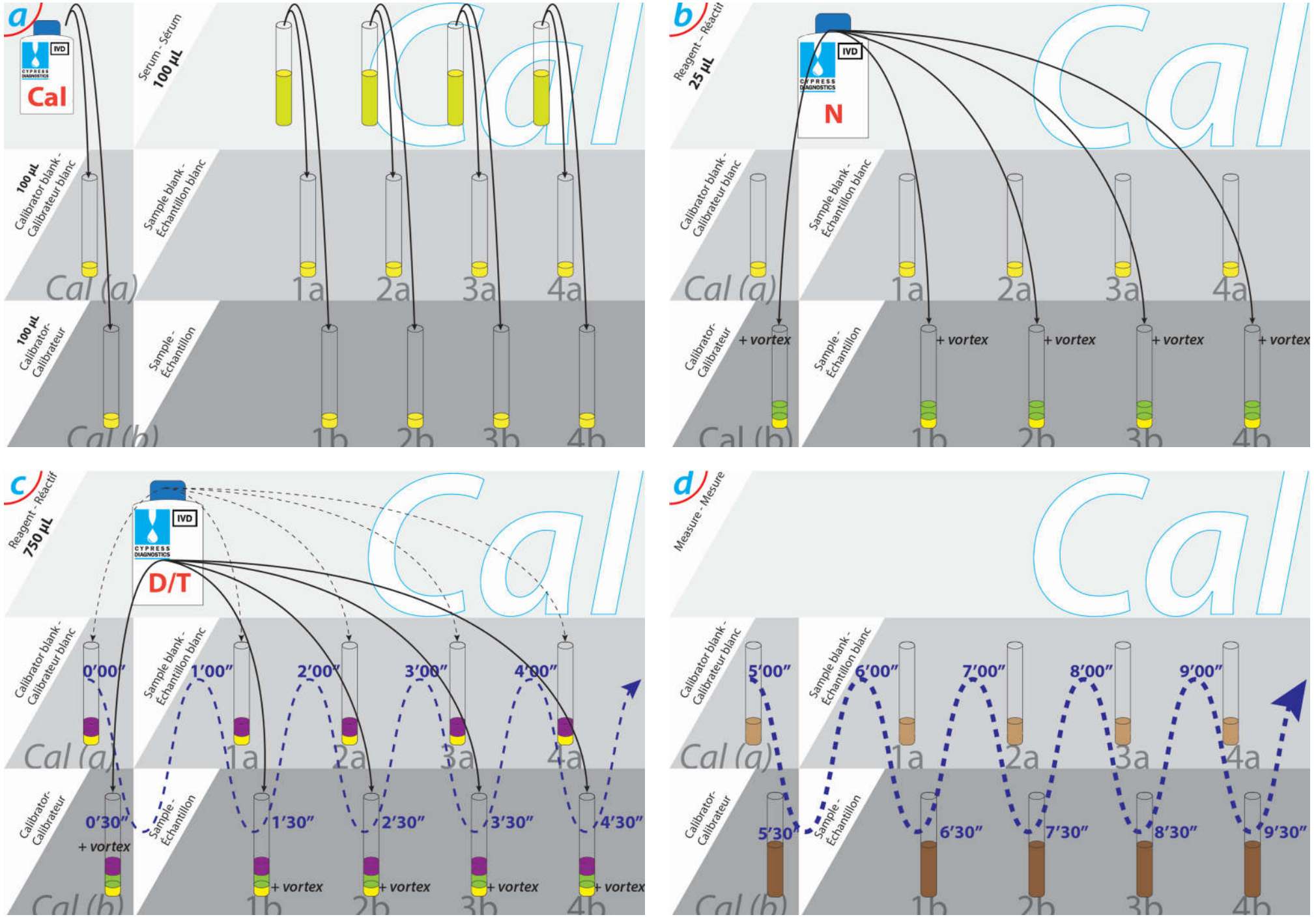
a
IVD
CYPRESS DIAGNOSTICS
Cal
Serum - Sérum
100 µL
100 µL
Calibrator blank - Calibrateur blanc
Sample blank - Échantillon blanc
Cal (a)
1a
2a
3a
4a
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Calibrator - Calibrateur
Sample - Échantillon
Cal (b)
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2b
3b
4b
b
Reagent - Réactif
25 µL
N
+ vortex
c
Reagent - Réactif
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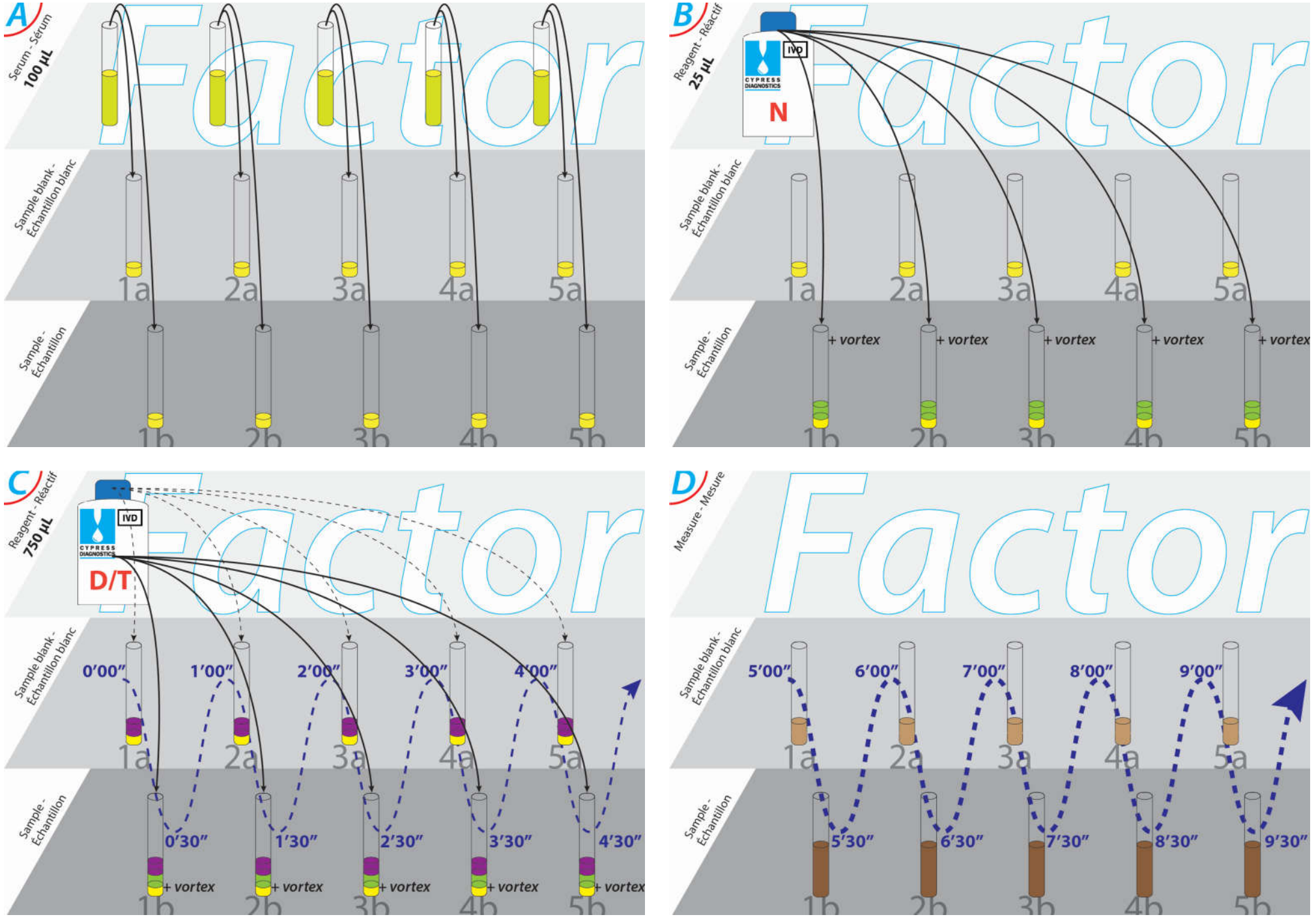
8'30"
9'30"


A
Serum - Sérum
100 µL
Factor
Sample blank - Échantillon blanc
Sample - Échantillon
1a
2a
3a
4a
5a
1b
2b
3b
4b
5b
B
Reagent - Réactif
25 µL
IVD
CYPRESS DIAGNOSTICS
N
+ vortex
C
Reagent - Réactif
750 µL
D/T
0'00"
1'00"
2'00"
3'00"
4'00"
0'30"
1'30"
2'30"
3'30"
4'30"
D
Measure - Mesure
5'00"
6'00"
7'00"
8'00"
9'00"
5'30"
6'30"
7'30"
8'30"
9'30"

REF	HB0270	HB0020	HB0020A
VOL	2 x 125 mL	1 x 125 mL	4 x 125 mL
Standard	-	-	-

Bilirubin Total

DMSO. Colorimetric

REAGENT PREPARATION AND STABILITY

All reagents are ready for use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-25 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred, if color development has occurred in reagent N, or if blank absorbance at 546 nm ≥ 0,10 the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor only when quality controls are within the defined ranges. Otherwise, use the Biochemistry Calibrator (**HBC03)** for calibration. Use the value indicated on the insert 'with sample blank'.Note 2
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples. If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum or plasma, free of hemolysis. Protect samples from direct light. Bilirubin is stable up to 4 days at 2-8 °C and 2 months at -20 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature. Protect samples from direct sunlight.
Then, pipette into a test tube:

For Blank	750 µL Reagent T
For Sample/Cal BlankNote 2	100 µL Sample/Calibrator + 750 µL Reagent T
For Sample/CalNote 2	100 µL Sample/Calibrator + 25 µL Reagent N + 750 µL Reagent T

Thus for every sample, you need to prepare 2 test tubes: one for measuring the sample blank (background coloration) and one for measuring the real sample coloration. Add Reagent N only to the second tube. Add Reagent T last, mix and incubate for exactly 5 minutes at room temperature. Aspirate the mixture in the instrument, exactly 5 minutes after addition of the Reagent T.
Use the illustrations on the next page for guidance to perform this test in a time-efficient way. Watch our Bilirubin video : https://diagnostics.be/product/hb0270

PROGRAM SETUP

Program Name:	BILT		**Blank Low:**	0,0000Note 1	
Program Method:	End Point		**Blank High:**	0,1000Note 1	
Main Filter:	546	nm	**Normal Low:**	0,2000	mg/dL
Sub Filter:	None	nm	**Normal High:**	1,1000	mg/dL
Program Unit:	mg/dL		**Num of STD:**	0Note	
Aspiration volume:	0550	µL	**CONC:**	0,0000Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	12,0000Note 2	
Test time:	003	sec	**Control N min:**	Enter valueNote 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter valueNote 3	mg/dL
Linearity Min:	0,1000	mg/dL	**Control P min:**	Enter valueNote 3	mg/dL
Linearity Max:	20,0000	mg/dL	**Control P max:**	Enter valueNote 3	mg/dL
Blank:	SerumNote 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,1 mg/dL (detection limit) to 20 mg/dL (linearity limit). If the obtained results are greater than 20 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. The Blank method programmed is Serum! Pay attention, this determines the calculation of the results, not the blank aspiration!
   - Aspirate distilled water to adjust the instrument to zero (AD value)
   - "**Test Blank**" → "yes" and aspirate **Reagent T** (blank)
   - In the standard/sample menu,
     a. "Aspirate Serum**"** = Standard/Sample Blank.
     b. "Aspirate Standard/Sample" = Standard/Sample (including 25 µL of RN).
2. Calibration by means of a Factor, only when quality controls are within the defined ranges. Otherwise, use the Biochemistry Calibrator (HBC03) for calibration. Use the value indicated on the insert 'with sample blank'. Program NUM of STD (1) and CONC **(**as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

2021-02 (4.1) - Replaces all previous versions

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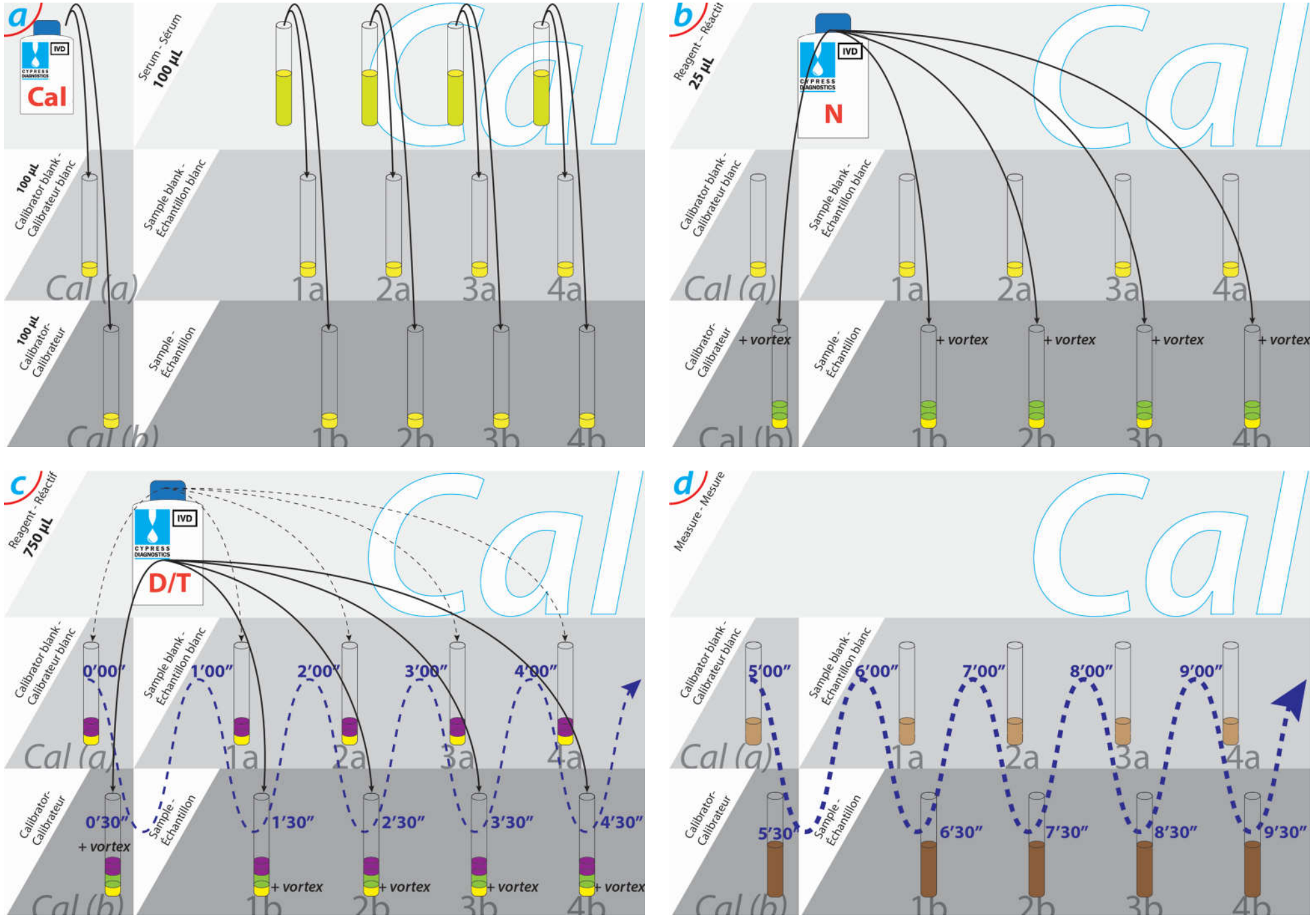
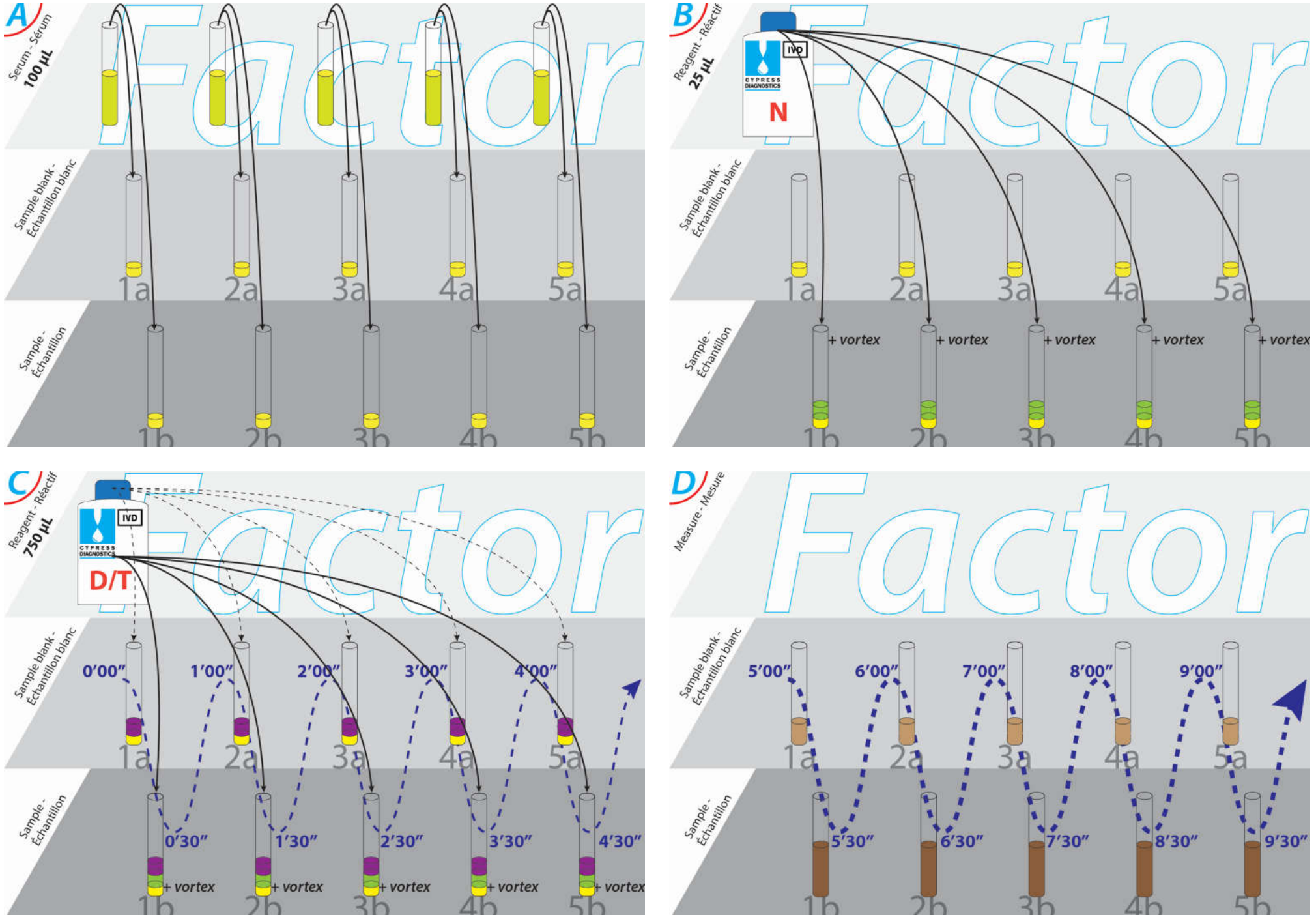

a
IVD
CYPRESS DIAGNOSTICS
Cal
Serum - Sérum
100 µL
100 µL
Calibrator blank - Calibrateur blanc
Sample blank - Échantillon blanc
Cal (a)
1a
2a
3a
4a
100 µL
Calibrator - Calibrateur
Sample - Échantillon
Cal (b)
1b
2b
3b
4b
b
Reagent - Réactif
25 µL
N
+ vortex
c
Reagent - Réactif
750 µL
D/T
0'00"
1'00"
2'00"
3'00"
4'00"
0'30"
1'30"
2'30"
3'30"
4'30"
d
Measure - Mesure
5'00"
6'00"
7'00"
8'00"
9'00"
5'30"
6'30"
7'30"
8'30"
9'30"


A
Serum - Sérum
100 µL
Factor
Sample blank - Échantillon blanc
Sample - Échantillon
1a
2a
3a
4a
5a
1b
2b
3b
4b
5b
B
Reagent - Réactif
25 µL
IVD
CYPRESS DIAGNOSTICS
N
+ vortex
C
Reagent - Réactif
750 µL
D/T
0'00"
1'00"
2'00"
3'00"
4'00"
0'30"
1'30"
2'30"
3'30"
4'30"
D
Measure - Mesure
5'00"
6'00"
7'00"
8'00"
9'00"
5'30"
6'30"
7'30"
8'30"
9'30"

REF	HB0030	HB0030A	HB0030M
VOL	2 x 125 mL	8 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	4 x 5 mL	-

Calcium

Arsenazo III. Colorimetric. Monoreagent

REAGENT PREPARATION AND STABILITY

The reagent and standard are ready for use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 620 nm ≥ 0,80 the reagent should be discarded.[Note 1]

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration.[Note 2]
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). [Note 3] Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type:
human serum or plasma , separated from cells as rapidly as possible. Blood anticoagulants with oxalate, citrate or EDTA are not acceptable since these chemicals will strongly chelate calcium.
Stability of the samples: Calcium is stable 10 days at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1,0 mL Reagent
For Standard[Note 2]	20 µL Standard + 1,0 mL Reagent
For Sample	20 µL Sample + 1,0 mL Reagent

You can prepare several samples simultaneously. Mix and incubate for 2 minutes at 15 - 25 °C (room temperature). After the incubation time, aspirate and measure the samples within 1 hour after preparation.

PROGRAM SETUP

Program Name:	CaAR		**Blank Low:**	0,0000[Note 1]	
Program Method:	End Point		**Blank High:**	0,8000[Note 1]	
Main Filter:	620	nm	**Normal Low:**	8,6000[Note 4]	mg/dL
Sub Filter:	None	nm	**Normal High:**	10,2000[Note 4]	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1[Note 2]	
Aspiration volume:	0800	µL	**CONC:**	value: see vial[Note 2]	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value[Note 3]	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 3]	mg/dL
Linearity Min:	0,1630	mg/dL	**Control P min:**	Enter value[Note 3]	mg/dL
Linearity Max:	20,0000	mg/dL	**Control P max:**	Enter value[Note 3]	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	3				

MEASURING RANGE

This method is linear from 0,163 mg/dL (detection limit) to 20 mg/dL (linearity limit). If the obtained results are greater than 20 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum or plasma samples.

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REF	HB005
VOL	2 x 125 mL
Standard	1 x 5 mL

Chloride

Thiocyanate. Colorimetric

REAGENT PREPARATION AND STABILITY

Reagent and standard are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 480 nm ≥ 0,15, the reagent should be discarded.[Note 1] Handle standard very carefully to prevent contamination.

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit.[Note 2] Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration.
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**).[Note 3] Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma, free of hemolysis and separated from cells as rapidly as possible. Anticoagulants such as oxalate or EDTA will interfere.
Chloride is stable 1 week at room temperature (15 - 25 °C), 15 days in refrigerator (2 - 8 °C) and 1 month frozen (-20 °C).

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1,00 mL Reagent 1
For Standard[Note 2]	10 µL Standard + 1,00 mL Reagent 1
For Sample	10 µL Sample + 1,00 mL Reagent 1

You can prepare several samples simultaneously. Mix and incubate for 5 minutes at 37 °C or for 5 minutes at 15 - 25 °C (room temperature). After the incubation time, aspirate and measure the samples within 30 minutes after preparation.

PROGRAM SETUP

Program Name:	Cl		**Blank Low:**	0,0000[Note 1]	
Program Method:	End Point		**Blank High:**	0,1500[Note 1]	
Main Filter:	492	nm	**Normal Low:**	95,0000[Note 4]	mEq/L
Sub Filter:	None	nm	**Normal High:**	115,0000[Note 4]	mEq/L
Program Unit:	mEq/L		**Num of STD:**	1[Note 2]	
Aspiration volume:	0800	µL	**CONC:**	value: see vial[Note 2]	mEq/L
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value[Note 3]	mEq/L
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 3]	mEq/L
Linearity Min:	0,4540	mEq/L	**Control P min:**	Enter value[Note 3]	mEq/L
Linearity Max:	190,0000	mEq/L	**Control P max:**	Enter value[Note 3]	mEq/L
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,454 mEq/L (detection limit) to 190 mEq/L (linearity limit). If the obtained results are greater than 190 mEq/L, dilute the sample 1:2 with distilled water, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum or plasma samples.

2023-06 (6.0) - Replaces all previous versions

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Cholesterol

Enzymatic. Colorimetric test
CHOD-POD

REF	HBL010	HBL010A	HBL010M
VOL	2 x 125 mL	8 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	4 x 5 mL	-

REAGENT PREPARATION AND STABILITY

The reagent and standard are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 510 nm ≥ 0,26, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Note 2 Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration.
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum or plasma: stability of the sample for 7 days at 2-8 °C or 3 months at -20 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL Reagent
For Standard Note 2	10 µL Standard + 1 mL Reagent
For Sample	10 µL Sample + 1 mL Reagent

You can prepare several samples simultaneously. Mix and incubate for 10 minutes at 37 °C or for 15 minutes at 15 - 25 °C (room temperature). After the incubation time, aspirate and measure the samples within 45 minutes after preparation.

PROGRAM SETUP

Program Name:	CHOLLn		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,2600 Note 1	
Main Filter:	510	nm	**Normal Low:**	120,0000	mg/dL
Sub Filter:	None	nm	**Normal High:**	200,0000	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1 Note 2	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	0,5210	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	1000,0000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,521 mg/dL (detection limit) to 1000 mg/dL (linearity limit). If the obtained results are greater than 1000 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

2021-02 (5.0) - Replaces all previous versions

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HDL Cholesterol

Enzymatic. Colorimetric

REF	**HBL011**
VOL	120 + 40 mL
Standard	-

REAGENT PREPARATION AND STABILITY

R1 and R2 are ready to use.

All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.

The reagents are light sensitive. Do not leave bottles open. Do not freeze the reagents.

R1 and R2: once opened they are stable 60 days at 2-8 °C. The reagent should be a clear solution. If turbidity or precipitation has occurred, the reagent should be discarded.[Note 1]

CALIBRATION & QUALITY CONTROL

Use the HDL/LDL calibrator (**HBC11**) for calibration. The concentration is lot specific and given on the label of the calibrator.[Note 2]

Control sera are recommended to monitor the performance of assay procedures. Use **the HDL/LDL Control kit (**HBC10)**.** [Note 3] Prepare and measure these controls the same as samples.

If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum or plasma (EDTA, citrate, Li Heparin). Fasting and non-fasting samples can be used.

PROCEDURE

Make sure the reagents and samples are at room temperature. Then, pipette into a test tube:

For Reagent Blank[Note 1]	10 µL Distilled water + 750 µL R1
For Sample/Calibrator Blank[Note 2]	10 µL Sample/Calibrator + 750 µL R1
For Sample/Calibrator	10 µL Sample/Calibrator + 750 µL R1
Mix and incubate for **exactly 5 minutes at 37 °C.** Then add:	
For Reagent Blank[Note 1]	250 µL R2
For Sample/Calibrator[Note 2]	250 µL R2
Mix and incubate for **exactly 5 minutes at 37** °C. Then aspirate to measure.	

Thus, for every sample, you need to prepare 2 test tubes: one for the Calibrator/Sample Blank, to measure the background coloration caused by the sample, and one for the Calibrator/Sample to measure the coloration caused by the reaction. After mixing Calibrator/Sample and R1, incubate at 37 °C for exactly 5 minutes. Then add R2 only to the Calibrator/Sample tube, mix and incubate for another 5 minutes at 37 °C. Then aspirate the mixtures in the analyser to measure exactly 10 minutes after adding R1. You can prepare several samples simultaneously, as long as you respect the incubation times indicated**.**

Use the illustrations on the next page for guidance to perform this test in a time-efficient way.

PROGRAM SETUP

Program Name:	HDLd		**Blank Low:**	0,0000[Note 1]	
Program Method:	End Point		**Blank High:**	1,0000[Note 1]	
Main Filter:	578	nm	**Normal Low:**	59,0000	mg/dL
Sub Filter:	None	nm	**Normal High:**	80,0000	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0550	µL	**CONC:**	(value see vial)[Note 2]	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value[Note 3]	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 3]	mg/dL
Linearity Min:	1,0600	mg/dL	**Control P min:**	Enter value[Note 3]	mg/dL
Linearity Max:	184,8000	mg/dL	**Control P max:**	Enter value[Note 3]	mg/dL
Blank:	Serum[Note 1]		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 1,06 mg/dL (detection limit) to 184,8 mg/dL (linearity limit). If the obtained results are greater than 184,8 mg/dL, dilute the sample 1:2 with NaCl 9 g/L, repeat the determination, and multiply the result by factor 2.

NOTES

1. The Blank method programmed is Serum! Pay attention, this determines the calculation of the results, not the blank aspiration!
   - Aspirate distilled water to adjust the instrument to zero (AD value)
   - **"Test Blank"** → "yes" and aspirate the Reagent Blank (R1 + R2 + distilled water).
   - In the Calibrator/Sample menu,
     a. "**Aspirate Serum**" = Calibrator/Sample Blank mixture (=Calibrator/Sample + R1).
     b. "**Aspirate Standard/Sample**" = Calibrator/Sample mixture (=Calibrator/Sample + R1 + R2).

   If the blank absorbance is out of range, the instrument will give you a flag.
2. Use the HDL/LDL calibrator (HBC11) for calibration. Enter the concentration values shown on the calibrator vials (HBC11).
3. The control values can be found on the label of the control vial (**HBC10**).

2021-02 (4.0) - Replaces all previous versions

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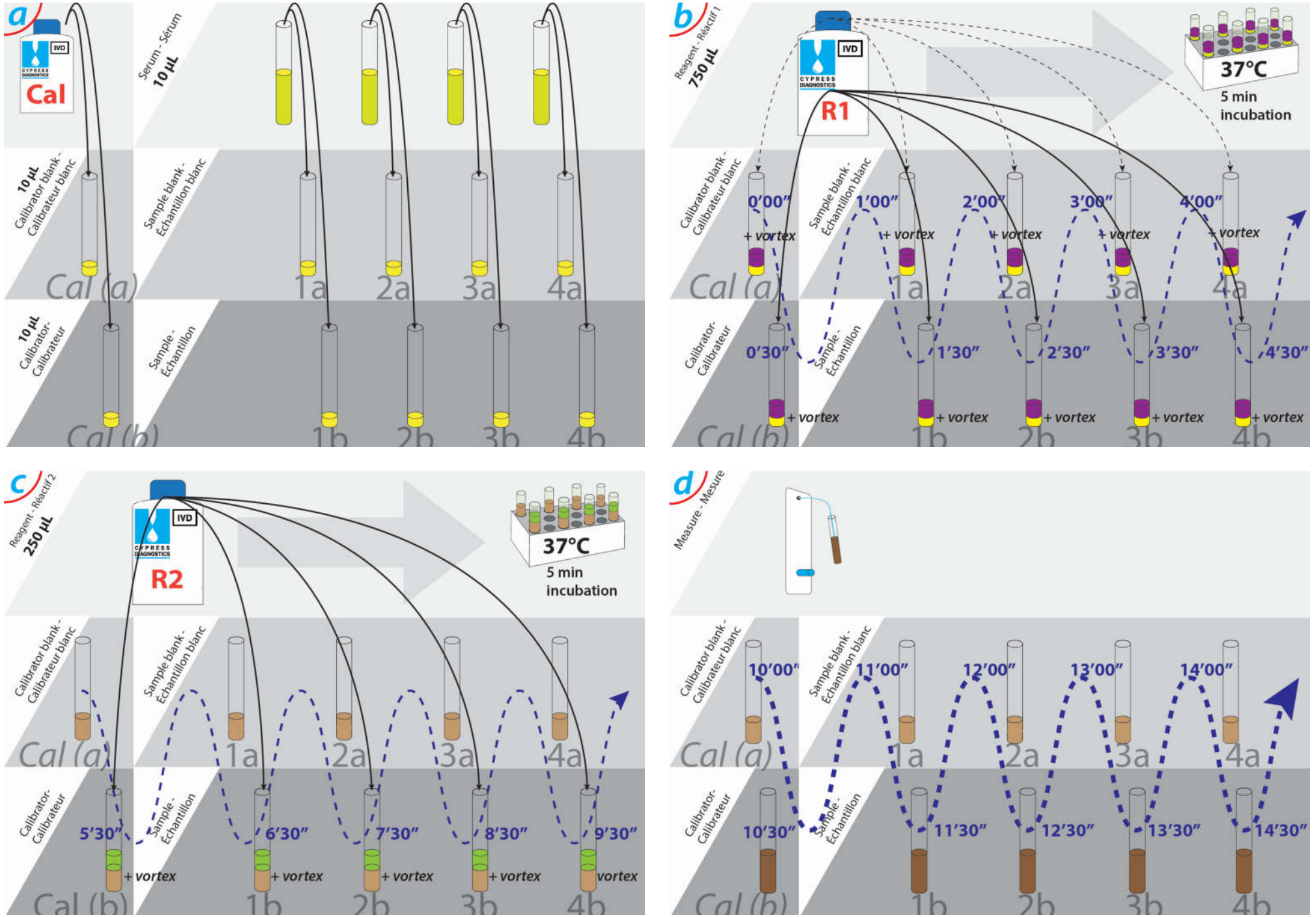
a
IVD
CYPRESS DIAGNOSTICS
Cal
Serum - Sérum
10 µL
10 µL
Calibrator blank - Calibrateur blanc
Sample blank - Échantillon blanc
Cal (a)
1a
2a
3a
4a
10 µL
Calibrator - Calibrateur
Sample - Échantillon
Cal (b)
1b
2b
3b
4b
b
Reagent - Réactif 1
750 µL
R1
37°C
5 min incubation
0'00"
1'00"
2'00"
3'00"
4'00"
+ vortex
0'30"
1'30"
2'30"
3'30"
4'30"
c
Reagent - Réactif 2
250 µL
R2
37°C
5 min incubation
5'30"
6'30"
7'30"
8'30"
9'30"
vortex
d
Measure - Mesure
10'00"
11'00"
12'00"
13'00"
14'00"
10'30"
11'30"
12'30"
13'30"
14'30"

REF	HBL012
VOL	120 + 40 mL
Standard	-

LDL Cholesterol

Enzymatic. Colorimetric.

REAGENT PREPARATION AND STABILITY

R1 and R2 are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, **protected from light** and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
The reagents are light sensitive. Do not leave bottles open. Do not freeze the reagents.
R1 and R2: once opened they are stable for 60 days at 2-8 °C. The reagents should be a clear solution. If turbidity or precipitation has occurred, the reagent should be discarded.[Note 1]

CALIBRATION & QUALITY CONTROL

Use the HDL/LDL calibrator (**HBC11**) for calibration. The concentration is lot specific and given on the label of the calibrator.[Note 2]
Control sera are recommended to monitor the performance of assay procedures. **Use the HDL/LDL Control kit (HBC10).** [Note 3] Prepare and measure these controls the same as samples. If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum or plasma (EDTA, citrate). Fasting and non-fasting samples can be used. Do not use plasma containing heparin as anticoagulant.

PROCEDURE

Make sure the reagents and samples are at room temperature. Then, pipette into a test tube:

For Reagent Blank[Note 1]	10 µL Distilled water + 750 µL R1
For Sample/Calibrator Blank[Note 2]	10 µL Sample/Calibrator + 750 µL R1
For Sample/Calibrator	10 µL Sample/Calibrator + 750 µL R1
Mix and incubate for exactly 5 minutes at 37 °C. Then add:	
For Reagent Blank[Note 1]	250 µL R2
For Sample/Calibrator[Note 2]	250 µL R2
Mix and incubate for exactly 5 minutes at 37 °C. Then aspirate to measure.	

Thus for every sample, you need to prepare 2 test tubes: one for the Calibrator/Sample Blank, to measure the background coloration caused by the sample, and one for the Calibrator/Sample to measure the coloration caused by the reaction. After mixing Calibrator/Sample and R1, incubate at 37 °C for exactly 5 minutes. Then add R2 only to the Calibrator/Sample tube, mix and incubate for another 5 minutes at 37 °C. Then aspirate the mixtures in the analyser to measure exactly 10 minutes after adding R1. You can prepare several samples simultaneously as long as you respect the times mentioned.
Use the illustrations on the next page for guidance to perform this test in a time-efficient way.

PROGRAM SETUP

Program Name:	LDLd		**Blank Low:**	0,0000[Note 1]	
Program Method:	End Point		**Blank High:**	1,0000[Note 1]	
Main Filter:	578	nm	**Normal Low:**	50,0000	mg/dL
Sub Filter:	None	nm	**Normal High:**	100,0000	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0550	µL	**CONC:**	(value see vial)[Note 2]	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value[Note 3]	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 3]	mg/dL
Linearity Min:	1,6400	mg/dL	**Control P min:**	Enter value[Note 3]	mg/dL
Linearity Max:	250,0000	mg/dL	**Control P max:**	Enter value[Note 3]	mg/dL
Blank:	Serum[Note 1]		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 1,64 mg/dL (detection limit) to 250 mg/dL (linearity limit). If the obtained results are greater than 250 mg/dL, dilute the sample 1:2 with NaCl 9 g/L, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. The Blank method programmed is Serum! Pay attention, this determines the calculation of the results, not the blank aspiration!
   - Aspirate distilled water to adjust the instrument to zero (AD value)
   - "**Test Blank**" → "yes" and aspirate the Reagent Blank (R1 + R2 + distilled water).
   - In the Calibrator/Sample menu,
     a. "**Aspirate Serum**" = Calibrator/Sample Blank mixture (=Calibrator/Sample + R1).
     b. "Aspirate Standard/Sample" = Calibrator/Sample mixture (=Calibrator/Sample + R1 + R2).
2. Use the HDL/LDL calibrator (HBC11) for calibration. Enter the concentration values shown on the calibrator vials (HBC11).
3. The control values can be found on the label of the HDL/LDL Direct control set vials (**HBC10**).

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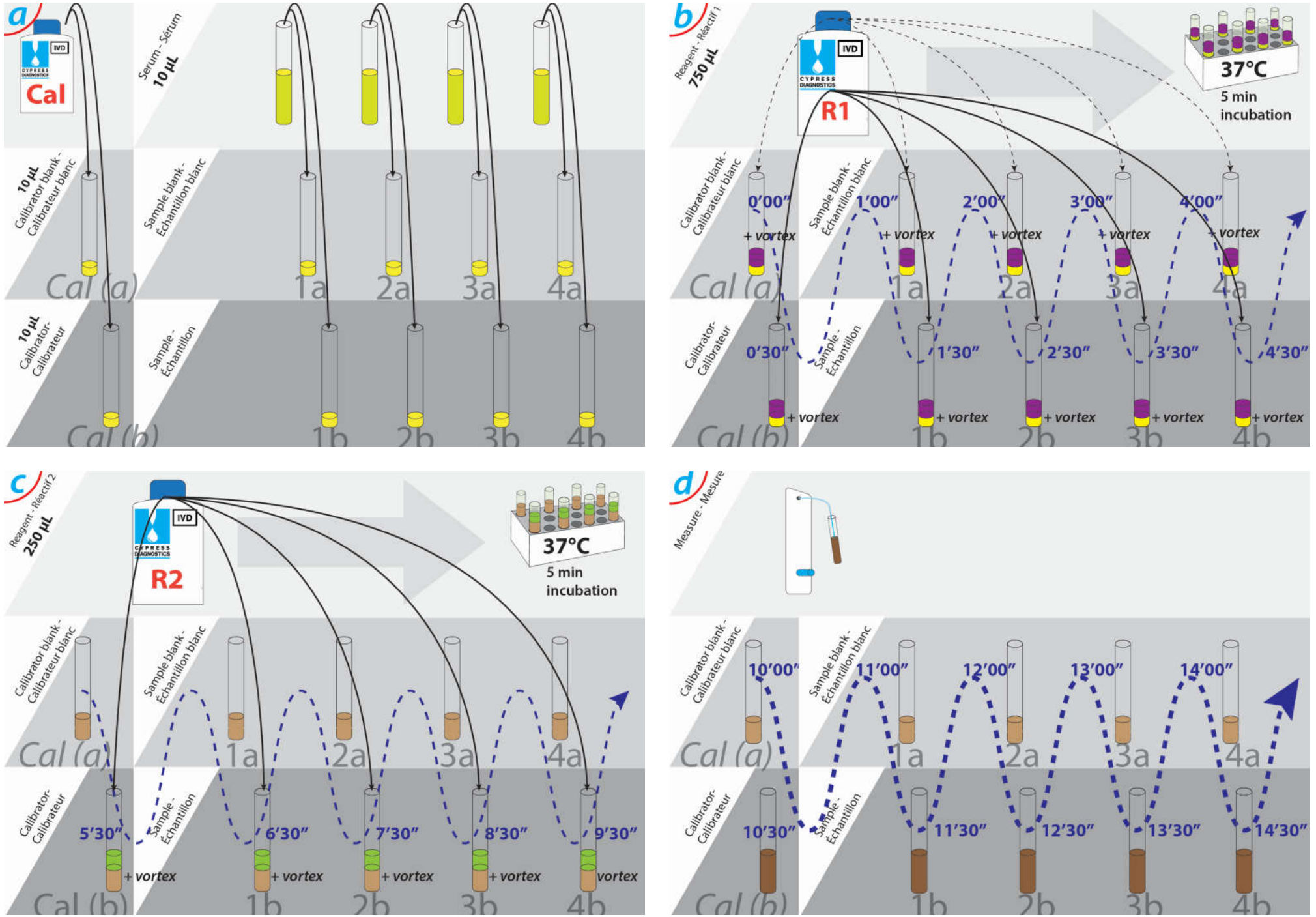
a
IVD
CYPRESS DIAGNOSTICS
Cal
Serum - Sérum
10 µL
10 µL
Calibrator blank - Calibrateur blanc
Sample blank - Échantillon blanc
Cal (a)
1a
2a
3a
4a
10 µL
Calibrator - Calibrateur
Sample - Échantillon
Cal (b)
1b
2b
3b
4b
b
Reagent - Réactif 1
750 µL
R1
37°C
5 min incubation
0'00"
1'00"
2'00"
3'00"
4'00"
+ vortex
0'30"
1'30"
2'30"
3'30"
4'30"
c
Reagent - Réactif 2
250 µL
R2
37°C
5 min incubation
5'30"
6'30"
7'30"
8'30"
9'30"
vortex
d
Measure - Mesure
10'00"
11'00"
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13'00"
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10'30"
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REF	**HBEL05**
VOL	60 + 15 mL
CK (NAC & MB) Control	1 x Lyoph.-2 mL

Creatine Kinase MB

Immuno-inhibition. UV. Kinetic

REAGENT PREPARATION AND STABILITY

Working reagent: mix 4 volumes of R1 with 1 volume of R2. After mixing, allow to stand for 30 minutes prior to use. The stability of the working reagent is 7 days at 2-8 °C or 12 hours at room temperature (15-25 °C).
Control: dissolve the contents in 2 mL of distilled water. Cap vial and mix gently to dissolve the contents. Stability: 8 hours at 15-25 °C, 5 days at 2-8 °C or 1 month at -20 °C. Bring at room temperature for about 30 min before use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 340 nm ≥ 1,20, the reagent should be discarded.[Note 1]

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor.
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use the **CK (NAC&MB) control (HBC08**) included in the kit.[Note 2] Prepare and measure these controls the same as samples. If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum free of hemolysis or heparin plasma Stability: 7 days at 2 - 8 °C, protected from light. CK-MB activity decreases a 10% after 24 hours at 4 °C or 1 hour at 25 °C. Use fresh samples.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank[Note 1]	1,00 mL Working reagent (R1 + R2)
For Sample/(Calibrator)	40 µL Sample/(Calibrator) + 1,00 mL Working reagent (R1 + R2)

Mix and incubate for 10 **minutes at room temperature.** After the incubation time, aspirate and measure the sample.

PROGRAM SETUP

Program Name:	CKMBL		**Blank Low:**	0,0000[Note 1]	
Program Method:	Kinetic		**Blank High:**	1,2000[Note 1]	
Main Filter:	340	nm	**Normal Low:**	1,0000	U/L
Sub Filter:	None	nm	**Normal High:**	24,0000	U/L
Program Unit:	U/L		**Num of STD:**	0	
Aspiration volume:	0800	µL	**CONC:**	0,0000	U/L
Delay Time:	10	sec	**Factor:**	8255,0000	
Test time:	300	sec	**Control N min:**	Enter value[Note 2]	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 2]	U/L
Linearity Min:	1,9000	U/L	**Control P min:**	Enter value[Note 2]	U/L
Linearity Max:	1000,0000	U/L	**Control P max:**	Enter value[Note 2]	U/L
Blank:	Reagent[Note 1]		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 1,9 U/L (detection limit) to 1000 U/L (linearity limit). If the obtained results are greater than 1000 U/L, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. The control values can be found on the label of the control vial.

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Creatine Kinase NAC

NAC Activated. UV. Kinetic

REF	**HBEL03**
VOL	60 + 15 mL

REAGENT PREPARATION AND STABILITY

Mix 4 volumes of reagent 1 with 1 volume of reagent 2. The stability of the working reagent is 2 weeks at 2 - 8 °C or 48 hours at room temperature (15 - 25 °C).
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 340 nm ≥ 1,0 the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. Preprogrammed factors can only be used when quality controls are within the defined ranges. Otherwise, use the Biochemistry Calibrator **(HBC03)** for calibration. Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. **Use Biochemistry Normal and Pathological Controls (HBC01, HBC02).** Also a CK (NAC & MB) Control (HBC08) is available.Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum free of hemolysis or heparin plasma Stability: 7 days at 2 - 8 °C, protected from light. The creatinine kinase activity decreases 10% after 1 day at 2 - 5 °C or after 1 hour at 15 - 25 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank Note 1	1,00 mL Working reagent (R1 + R2)
For Sample/(Calibrator) Note 2	20 µL Sample/(Calibrator) + 1,00 mL Working reagent (R1 + R2)

Prepare, mix and measure **one sample at a time**. Aspirate the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	CKNACL		**Blank Low:**	0,0000 Note 1	
Program Method:	Kinetic		**Blank High:**	1,0000 Note 1	
Main Filter:	340	nm	**Normal Low:**	34,0000	U/L
Sub Filter:	None	nm	**Normal High:**	195,0000	U/L
Program Unit:	U/L		**Num of STD:**	0 Note 2	
Aspiration volume:	0800	µL	**CONC:**	0,0000 Note 2	U/L
Delay Time:	120	sec	**Factor:**	8095,0000 Note 2	
Test time:	090	sec	**Control N min:**	Enter value Note 3	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	U/L
Linearity Min:	2,1200	U/L	**Control P min:**	Enter value Note 3	U/L
Linearity Max:	2000,0000	U/L	**Control P max:**	Enter value Note 3	U/L
Blank:	Reagent Note 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 2,12 U/L (detection limit) to 2000 U/L (linearity limit). If the obtained results are greater than 2000 U/L, dilute the sample 1:10 with saline solution, repeat the determination, and multiply the result by factor 10.

NOTES

1. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program NUM of STD (1) and **CONC** (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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Creatinine

Jaffé. Colorimetric. Kinetic without deproteinization

REF	HB0080	HB0080A	HB0080M
VOL	2 x 125 mL	8 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	4 x 5 mL	-

REAGENT PREPARATION AND STABILITY

Mix proportionally 1:1 R1 Picric Reagent and R2 Alkaline Reagent. The working reagent is stable for 10 days at 15 - 25 °C.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 25 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 510 nm ≥ 1,80, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or heparinized plasma
Creatinine is stable 24 hours at 2 - 8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank Note 1	1,00 mL Working reagent
For Standard Note 2	100 µL Standard + 1,00 mL Working reagent
For Sample	100 µL Sample + 1,00 mL Working reagent

Prepare, mix and measure **one sample at a time**. Aspirate the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	CRE		**Blank Low:**	0,0000 Note 1	
Program Method:	Two Point		**Blank High:**	1,8000 Note 1	
Main Filter:	510	nm	**Normal Low:**	0,6000 Note 4	mg/dL
Sub Filter:	None	nm	**Normal High:**	1,4000 Note 4	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0500	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	030	sec	**Factor:**	0,0000	
Test time:	060	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	0,1150	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	15,0000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent Note 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,115 mg/dL (detection limit) to 15 mg/dL (linearity limit). If the obtained results are greater than 15 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03)** for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).Enter the concentration values shown on the calibrator vials.
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum or plasma samples.

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REF	HBE11
VOL	100 + 20 mL
Standard	-

G6-PDH

Enzymatic. UV

REAGENT PREPARATION AND STABILITY

- R1- R4: ready to use
- R2- R3: Reconstitute the contents of each bottle with 2 mL of distilled water.

All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
R1 and R4 are stable until the expiration date on the label when stored tightly closed at 2-8 °C, protected from light and contaminations prevented during their use. After reconstitution, R2 and R3 are stable for 4 weeks at 2-8 °C. Do not use reagents over the expiration date.

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor.
Control sera are recommended to monitor the performance of assay procedures. A 2 level **G6-PDH Control (HBC09)** is available.[Note 3] **Control HBC09 does not need a digitonin pretreatment** (= precipitation with Reagent 4).
If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Erythrocytes: Preparation: Wash 0,2 mL of blood with 2 mL aliquots of 0,9% NaCl solution. Centrifuge after each wash for 10 min at around 3000 rpm. Repeat 3 times. Suspend the washed centrifuged erythrocytes in 0,5 mL of R4 and let stand for 15 min at 4 °C and then centrifuge again. Use the supernatant (= hemolysate) in the assay within 2 hours.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Sample	15 µL Hemolysate + 1000 µL R1 + 30 µL R2
Mix and **incubate at 37 °C for 5** minutes. Then add R3:	
For Sample	15 µL R3

Prepare, mix and measure **one sample at a time**. Aspirate the mixture in the instrument, **immediately** after addition of R3 to the sample. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks: "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	G6PDH		**Blank Low:**	0,0000[Note 1]	
Program Method:	Kinetic		**Blank High:**	0,0100[Note 1]	
Main Filter:	340	nm	**Normal Low:**	1170,0000[Note 4]	U/L
Sub Filter:	None	nm	**Normal High:**	2455,0000[Note 4]	U/L
Program Unit:	U/L		**Num of STD:**	0	
Aspiration volume:	0800	µL	**CONC:**	0,0000	U/L
Delay Time:	003	sec	**Factor:**	33650,0000	
Test time:	090	sec	**Control N min:**	Enter value[Note 3]	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 3]	U/L
Linearity Min:	154,0000	U/L	**Control P min:**	Enter value[Note 3]	U/L
Linearity Max:	4000,0000	U/L	**Control P max:**	Enter value[Note 3]	U/L
Blank:	Water		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 154 U/L (detection limit) to 4000 U/L (linearity limit). If the obtained results are greater than 4000 U/L, dilute the hemolysate 1:10 by adding 0,2 mL hemolysate to 1,8 mL 0,9% NaCl, repeat the determination, and multiply the result by factor 10.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Calibration by means of a Factor.
3. The control values can be found on the label of the control vial.
4. These values are for erythrocytes (U/L). To obtain results in U/g HGB, divide the results of this analysis with the results for Hemoglobin (g/L) for that sample.

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Glucose

Enzymatic. Colorimetric
GOD-POD

REF	HBL04	HBL04A	HBL04M
VOL	2 x 125 mL	8 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	4 x 5 mL	-

REAGENT PREPARATION AND STABILITY

Reagent and standard are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 510 nm ≥ 0,32, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**).Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human fluoride plasma , free of hemolysis and turbidity. Plasma should be isolated in blood tubes containing sodium fluoride (NaF) to inhibit glycolysis. In fluoride plasma, the glucose concentration is stable for up to 3 days at room temperature. For fasting glucose determination, fasting for at least 12 hours is recommended before sample collection.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1,00 mL Reagent
For Standard Note 2	10 µL Standard + 1,00 mL Reagent
For Sample	10 µL Sample + 1,00 mL Reagent

You can prepare several samples simultaneously. Mix and incubate for 10 minutes at 37 °C or for 15 minutes at 15-25 °C (room temperature). After the incubation time, aspirate and measure the samples within 40 minutes after preparation.

PROGRAM SETUP

Program Name:	GLUCLn		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,3200 Note 1	
Main Filter:	510	nm	**Normal Low:**	74,0000	mg/dL
Sub Filter:	None	nm	**Normal High:**	100,0000	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	14,1000	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	320,0000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 14,1 mg/dL (limit of quantitation) to 320 mg/dL (linearity limit). If the obtained results are greater than 320 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HBEL06	HBEL061
VOL	240 + 60 mL	60 +15 mL
Standard	-	-

γ-GT

Carboxy substrate. Colorimetric. Kinetic

REAGENT PREPARATION AND STABILITY

Mix 4 volumes of R1 (Buffer) with 1 volume of R2 (Substrate). The stability of this working reagent is 21 days at 2-8 °C or 5 days at room temperature (15-25 °C).
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 405 nm ≥ 1,80, the reagent should be discarded.[Note 1]

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. [Note 2] Alternatively, you can use the Biochemistry Calibrator **(HBC03**) for calibration.
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). [Note 3] Prepare and measure these controls the same as samples.
If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum: γ-GT is stable for at least 3 days at 2-8 °C, 8 hours at 15-25 °C and 1 month at -20 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank[Note 1]	1,00 mL Working reagent (R1 + R2)
For Sample/(Calibrator)[Note 2]	100 µL Sample/(Calibrator) + 1,00 mL Working reagent (R1 + R2)

Prepare, mix and measure **one sample at a time**. Aspirate the mixture in the instrument, **immediately** after addition of the working reagent to the sample/(calibrator). Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks: "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	GGTL		**Blank Low:**	0,0000[Note 1]	
Program Method:	Kinetic		**Blank High:**	1,8000[Note 1]	
Main Filter:	405	nm	**Normal Low:**	7,0000	U/L
Sub Filter:	None	nm	**Normal High:**	50,0000	U/L
Program Unit:	U/L		**Num of STD:**	0[Note 2]	
Aspiration volume:	0800	µL	**CONC:**	0,0000[Note 2]	U/L
Delay Time:	060	sec	**Factor:**	1190,0000[Note 2]	
Test time:	090	sec	**Control N min:**	Enter value[Note 3]	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 3]	U/L
Linearity Min:	2,0000	U/L	**Control P min:**	Enter value[Note 3]	U/L
Linearity Max:	300,0000	U/L	**Control P max:**	Enter value[Note 3]	U/L
Blank:	Reagent[Note 1]		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 2 U/L (detection limit) to 300 U/L (linearity limit). If the obtained results are greater than 300 U/L, dilute the sample 1:10 with saline solution, repeat the determination, and multiply the result by factor 10.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Calibration by means of a Factor. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HBEL010	HBEL010M
VOL	1 x 240 + 1 x 60 mL	6 x 30 + 3 x 15 mL

GOT (AST)

NADH. UV. Kinetic. According to IFCC

REAGENT PREPARATION AND STABILITY

Mix 4 volumes of R1 (buffer) with 1 volume of R2 (substrate). The stability of the working reagent is 24 hours at 15 - 25 °C or 14 days at 2 - 8 °C.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
The reagent should be a clear solution.If turbidity or precipitation has occurred or if blank absorbance at 340 nm < 1,00, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. Preprogrammed factors can only be used when quality controls are within the defined ranges. Otherwise, use the Biochemistry Calibrator **(HBC03)** for calibration.Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**).Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma Stability 2 days at 2 - 8 °C. Fasting of at least 12 hours is recommended before sample collection.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For BlankNote 1	1,00 mL Working reagent (R1 + R2)
For Sample/(Calibrator)Note 2	100 µL Sample/(Calibrator) + 1,00 mL Working reagent (R1 + R2)

Prepare, mix and measure **one sample at a time.** Aspirate the mixture in the instrument, **immediately** after addition of the working reagent to the sample/(calibrator). Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	GOTL		**Blank Low:**	1,0000Note 1	
Program Method:	Kinetic		**Blank High:**	2,5000Note 1	
Main Filter:	340	nm	**Normal Low:**	3,1200	U/L
Sub Filter:	None	nm	**Normal High:**	38,0000	U/L
Program Unit:	U/L		**Num of STD:**	0Note 2	
Aspiration volume:	0800	µL	**CONC:**	0,0000Note 2	U/L
Delay Time:	060	sec	**Factor:**	1750,0000Note 2	
Test time:	090	sec	**Control N min:**	Enter valueNote 3	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter valueNote 3	U/L
Linearity Min:	3,1200	U/L	**Control P min:**	Enter valueNote 3	U/L
Linearity Max:	260,0000	U/L	**Control P max:**	Enter valueNote 3	U/L
Blank:	ReagentNote 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 3,12 U/L (detection limit) to 260 U/L (linearity limit). If the obtained results are greater than 260 U/L, dilute the sample 1:10 with saline solution, repeat the determination, and multiply the result by factor 10.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HBEL020	HBEL020M
VOL	1 x 240 + 1 x 60 mL	6 x 30 + 3 x 15 mL

GPT (ALT)

NADH. UV. Kinetic. According to IFCC

REAGENT PREPARATION AND STABILITY

Mix 4 volumes of R1 (Buffer) with 1 volume of R2 (Substrate). The stability of the working reagent is 24 hours at 15-25 °C or 4 weeks at 2-8 °C.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 340 nm < 1,00, the reagent should be discarded.[Note 1]

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. Preprogrammed factors can only be used when quality controls are within the defined ranges. Otherwise, use the Biochemistry Calibrator **(HBC03)** for calibration.[Note 2]
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**).[Note 3] Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma Stability 1 day at 2-8 °C. Fasting of at least 12 hours is recommended before sample collection.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank[Note 1]	1,00 mL Working reagent (R1 + R2)
For Sample/(Calibrator)[Note 2]	100 µL Sample/(Calibrator) + 1,00 mL Working reagent (R1 + R2)

Prepare, mix and measure **one sample at a time**. Aspirate the mixture in the instrument, **immediately** after addition of the working reagent to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	GPTL		**Blank Low:**	1,0000[Note 1]	
Program Method:	Kinetic		**Blank High:**	2,5000[Note 1]	
Main Filter:	340	nm	**Normal Low:**	3,0000	U/L
Sub Filter:	None	nm	**Normal High:**	40,0000	U/L
Program Unit:	U/L		**Num of STD:**	0[Note 2]	
Aspiration volume:	0800	µL	**CONC:**	0,0000[Note 2]	U/L
Delay Time:	060	sec	**Factor:**	1750,0000[Note 2]	
Test time:	090	sec	**Control N min:**	Enter value[Note 3]	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter value[Note 3]	U/L
Linearity Min:	3,0000	U/L	**Control P min:**	Enter value[Note 3]	U/L
Linearity Max:	260,0000	U/L	**Control P max:**	Enter value[Note 3]	U/L
Blank:	Reagent[Note 1]		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 3 U/L (detection limit) to 260 U/L (linearity limit). If the obtained results are greater than 260 U/L, dilute the sample 1:10 with saline solution, repeat the determination, and multiply the result by factor 10.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	**HT001**
VOL	30 + 10 mL
Standard	-

HbA1c Turbi

Turbidimetric

REAGENT PREPARATION AND STABILITY

Reagent 1, 2 and 3 are ready to use. Latex may sediment. Mix reagents gently before use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
Reagent 1 and 2 are stable for at least one month after opening when stored at 2 - 8 °C. Reagent deterioration: alterations in the physical appearance of the reagents or values of control materials outside of the manufacturer's acceptable range may be an indication of reagent instability.[Note 1]

CALIBRATION & QUALITY CONTROL

Use the **HbA1c Calibrator set (HT001S)** Program the values mentioned on the vials in the method programming. Use saline solution (9 g/L NaCl) or distilled water as STD 1, with value 0,001.[Note 2]
Control sera are recommended to monitor the performance of assay procedures. **HbA1c Control (HT001C) is available.**[Note 3] Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Human whole blood. Special preparation of the patients is unnecessary. Fasting samples are not required. No special additives or preservatives other than anticoagulants are required. Collect venous blood with EDTA using aseptic technique. HbA1c in whole blood collected with EDTA is stable for one week at 2 - 8 °C.
To determine HbA1c, a hemolysate must be prepared for each sample as well as for the HbA1c Calibrator (Level 1 to 4) and HbA1c Control (if required):
1. Dispense 1 mL of Reagent 3 into labelled test tubes (glass or plastic). Also provide test tubes for the calibrator and control.
2. Add 20 µL of well mixed whole blood (sample, calibrator, control) in the appropriate labelled test tube. Mix.
3. Allow to stand for 5 minutes or until complete lysis is evident. Hemolysates may be stored up to 10 days at 2 - 8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Mix reagents gently and pipette into a test tube:

For Blank	540 µL Reagent 1
For Calibrators/Sample	15 µL Calibrator/Sample (hemolyzed) + 540 µL Reagent 1
Mix and incubate for **exactly 5 minutes at 37** °C. Then add:	
For Blank	180 µL Reagent 2
For Calibrators/Sample	180 µL Reagent 2
Mix and incubate for **exactly 5 minutes at 37** °C. Then aspirate to measure.	

You can prepare several samples simultaneously, as long as you respect the incubation times indicated.

PROGRAM SETUP

Program Name:	HbA1c		**Normal Low:**	2,0000[Note 4]	%
Program Method:	End Point		**Normal High:**	6,0000[Note 4]	%
Main Filter:	620	nm	**Num of STD:**	5[Note 2]	
Sub Filter:	None	nm	**STD 1 CONC:**	0,0010[Note 2]	%
Program Unit:	%		**STD 2 CONC:**	(=CAL1)[Note 2]	%
Aspiration volume:	0500	µL	**STD 3 CONC:**	(=CAL2)[Note 2]	%
Delay Time:	001	sec	**STD 4 CONC:**	(=CAL3)[Note 2]	%
Test time:	003	sec	**STD 5 CONC:**	(=CAL4)[Note 2]	%
Dilution Factor:	1,0000		**Factor:**	0,0000[Note 2]	
Linearity Min:	2,0000	%	**Control N min:**	Enter value[Note 3]	%
Linearity Max:	16,0000	%	**Control N max:**	Enter value[Note 3]	%
Blank:	Reagent		**Control P min:**	Enter value[Note 3]	%
Num of Blank:	1		**Control P max:**	Enter value[Note 3]	%
Blank Low:	0,0000[Note 1]		**Cuvette Temp:**	37	°C
Blank High:	2,0000[Note 1]				

MEASURING RANGE

This method is linear from 2,0 % (detection limit) to 16,0 % (linearity limit).

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Enter the concentration values shown on the calibrator vials. STD1 corresponds with a saline solution of 9 g/L or distilled water, STD 2 corresponds to calibrator 1; STD 3 to calibrator 2; STD 4 to calibrator 3 and STD 5 to calibrator 4.
3. The control values can be found on the label of the control vial.

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REF	**HB011**
VOL	4 x 5 mL
Standard	-

Hemoglobin

Drabkin. Colorimetric.

REAGENT PREPARATION AND STABILITY

Working reagent :
- 4,9 mL distilled water + 2 drops of reagent and mix.

Or:
- 245 mL distilled water + 5 mL of reagent and mix.

The diluted reagent (working reagent) is stable 2 months at 2-8 °C, protected from sunlight.

All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.

The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 540 nm ≥ 0,01, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Use the **Hemoglobin Calibrator (HBS02).** Note 2
Hemoglobin Calibrator (**HBS02**) is ready to use. Hemoglobin Calibrator (**HBS02**) is stable at 2-8 °C up to the date of expiration as specified, when stored tightly closed, protected from light and contaminations, prevented during its use.

Control sera are recommended to monitor the performance of assay procedures. Note 3
If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Capillary or venous blood. Use anticoagulants like EDTA, heparin or oxalate. Stability 7 days at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	2,5 mL Working Reagent
For Calibrator	10 µL Calibrator + 2,5 mL Working Reagent
For Sample	10 µL Sample + 2,5 mL Working Reagent

Mix and incubate for **3 minutes** at 15-25 °C. Then aspirate to measure. You can prepare several samples simultaneously, as long as you respect the incubation times indicated.

PROGRAM SETUP

Program Name:	HGB		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,0100 Note 1	
Main Filter:	546	nm	**Normal Low:**	12,0000	g/dL
Sub Filter:	None	nm	**Normal High:**	18,0000	g/dL
Program Unit:	g/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	15,0000 Note 2	g/dL
Delay Time:	001	sec	**Factor:**	0,0000 Note 2	
Test time:	003	sec	**Control N min:**	Enter value Note 3	g/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	g/dL
Linearity Min:	0,1000	g/dL	**Control P min:**	Enter value Note 3	g/dL
Linearity Max:	20,0000	g/dL	**Control P max:**	Enter value Note 3	g/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,1 g/dL (detection limit) to 20 g/dL (linearity limit). If the obtained results are greater than 20 g/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Use the **Hemoglobin Calibrator (HBS02).** Enter the concentration value shown on the calibrator vial.
3. The control values can be found on the control sheets, delivered together with the control vials.

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Iron

Ferrozine. Colorimetric

REF	HB012
VOL	4 x 50 mL
Standard	1 x 10 mL

REAGENT PREPARATION AND STABILITY

R3 is ready to use.
Add the contents of one tube R2 reductant to the contents of one bottle R1 buffer. Cap and mix gently to dissolve content. This working reagent is stable for 3 months at 2-8 °C or 1 month at room temperature (15-25 °C).
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if the reagent blanc absorbance is out of range, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator **Specific** (HBC03-S) for calibration. Note 2
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls **Specific (HBC01-S, HBC02-S).** Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum or heparinized plasma. Hemolysis interferes with the test. Separate from the cells as rapidly as possible. The iron is stable up to 7 days stored at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature. Then, pipette into a test tube:

For Reagent Blank Note 1	200 µL Distilled water + 1 mL Working reagent + 1 drop R3
For Standard Blank Note 2	200 µL Standard + 1 mL Working reagent
For Sample Blank Note 2	200 µL Sample + 1 mL Working reagent
For Standard	200 µL Standard + 1 mL Working reagent + 1 drop R3
For Sample	200 µL Sample + 1 mL Working reagent + 1 drop R3

Mix and incubate for 10 minutes at 15-25 °C. After the incubation time, aspirate and measure all the samples within 30 min after preparation.
Thus, **for every sample, you need to prepare 2 test tubes**: one for measuring the sample blank (background coloration) and one for measuring the real sample coloration.

PROGRAM SETUP

Program Name:	IRON		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,1000 Note 1	
Main Filter:	578	nm	**Normal Low:**	40,0000	µg/dL
Sub Filter:	None	nm	**Normal High:**	175,0000	µg/dL
Program Unit:	µg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	µg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	µg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	µg/dL
Linearity Min:	0,8500	µg/dL	**Control P min:**	Enter value Note 3	µg/dL
Linearity Max:	1000,0000	µg/dL	**Control P max:**	Enter value Note 3	µg/dL
Blank:	Serum Note 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,85 µg/dL (detection limit) to 1000 µg/dL (linearity limit). If the obtained results are greater than 1000 µg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. The Blank method programmed is Serum! Pay attention, this determines the calculation of the results, not the blank aspiration!
   - Aspirate distilled water to adjust the instrument to zero (AD value)
   - "**Test Blank"** → "yes" and aspirate the **Reagent Blank**.
   - In the standard/sample menu,
     a. First: "Aspirate Serum" = Standard/Sample Blank.
     b. Secondly: "Aspirate Standard/Sample" = Standard/Sample (including 1 drop of R3).
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator **Specific (HBC03-S)** for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with **HBC03-S)**.
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HBEL04	HBEL041
VOL	240 + 60 mL	60 + 15 mL
Standard	-	-

Lactate Dehydrogenase

Pyruvate DGKC. UV. Kinetic.

REAGENT PREPARATION AND STABILITY

Mix 4 volumes of R1 (buffer) with 1 volume of R2 (substrate). The stability of working reagent is 15 days at 2-8 °C or 5 days at room temperature (15-25 °C).
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 340 nm < 1,00, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

Calibration by means of a Factor. Note 2 Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration.
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum, separated from the cells as rapidly as possible. Do not use oxalates as anticoagulants since they inhibit the enzyme. Do not use hemolyzed samples. LDH in the serum is stable for 2 days at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank Note 1	0,9 mL Working reagent (R1 + R2)
For Sample/(Calibrator) Note 2	15 µL Sample/(Calibrator) + 0,9 mL Working reagent (R1 + R2)

Prepare, mix and measure **one sample at a time.** Aspirate the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks: "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	LDHL		**Blank Low:**	1,0000 Note 1	
Program Method:	Kinetic		**Blank High:**	2,5000 Note 1	
Main Filter:	340	nm	**Normal Low:**	230,0000	U/L
Sub Filter:	None	nm	**Normal High:**	460,0000	U/L
Program Unit:	U/L		**Num of STD:**	0 Note 2	
Aspiration volume:	0700	µL	**CONC:**	0,0000 Note 2	U/L
Delay Time:	060	sec	**Factor:**	9690,0000 Note 2	
Test time:	090	sec	**Control N min:**	Enter value Note 3	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	U/L
Linearity Min:	3,4200	U/L	**Control P min:**	Enter value Note 3	U/L
Linearity Max:	1600,0000	U/L	**Control P max:**	Enter value Note 3	U/L
Blank:	Reagent Note 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 3,42 U/L (detection limit) to 1600 U/L (linearity limit). If the obtained results are greater than 1600 U/L, dilute the sample 1:10 with saline solution, repeat the determination, and multiply the result by factor 10.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Calibration by means of a Factor. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	**HBE09**
VOL	4 x 10 mL
Calibrator	1 x Lyoph. - 1 mL

Lipase

Enzymatic. Colorimetric. Kinetic

REAGENT PREPARATION AND STABILITY

R1 and R2: ready to use. Stability after opening 90 days at 2-8 °C.
R2: mix gently before use. Note 4
Calibrator: reconstitute the contents of one vial with 1 mL of distilled water. Mix gently until complete solution. Stability: 7 days at 2-8 °C. Divide calibrator solution into small volumes and freeze. Stability: 3 months at -20 °C.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 580 nm ≥ 1,4, the reagent should be discarded. R2 is a turbid orange-colored micro-emulsion, discard if turning to red. Note 1

CALIBRATION & QUALITY CONTROL

Use the calibrator included in the kit.Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls **(HBC01, HBC02).**Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma
Plasma: with sodium citrate, EDTA or heparin.
Stability: 2 days at 2 - 8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Reagent Blank Note 1	10 µL Distilled water + 1 mL Reagent 1 + 200 µL Reagent 2
For Calibrator Note 2	10 µL Calibrator + 1 mL Reagent 1 + 200 µL Reagent 2
For Sample	10 µL Sample + 1 mL Reagent 1 + 200 µL Reagent 2

Prepare, mix and measure **one sample at a time**. Aspirate the mixture in the instrument, **immediately** after addition of the working reagent to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample".

PROGRAM SETUP

Program Name:	LIPASE		**Blank Low:**	0,0000 Note 1	
Program Method:	Kinetic		**Blank High:**	1,4000 Note 1	
Main Filter:	578	nm	**Normal Low:**	5,0000	U/L
Sub Filter:	None	nm	**Normal High:**	38,0000	U/L
Program Unit:	U/L		**Num of STD:**	1 Note 2	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	U/L
Delay Time:	060	sec	**Factor:**	0,0000 Note 2	
Test time:	090	sec	**Control N min:**	Enter value Note 3	U/L
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	U/L
Linearity Min:	5,0000	U/L	**Control P min:**	Enter value Note 3	**U/L**
Linearity Max:	250,0000	U/L	**Control P max:**	Enter value Note 3	U/L
Blank:	Reagent Note 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 5 U/L (detection limit) to 250 U/L (linearity limit). If the obtained results are greater than 250 U/L, dilute the sample 1:10 with saline solution, repeat the determination, and multiply the result by factor 10.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Use the calibrator included in the kit. Enter the concentration values shown on the calibrator vials. Alternatively, you can use the Biochemistry Calibrator **(HBC03)** for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03)**.**
3. The control values can be found on the control sheets, delivered together with the control vials.
4. In some storage conditions (lower than the one indicated) a precipitate may appear in the vial that will not influence the reagent performance. However, it is recommended to re-suspend the product with a slight rotation.

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REF	HB0320	HB0320M
VOL	2 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	-

Magnesium

Xylidyl Blue - EGTA. Colorimetric

REAGENT PREPARATION AND STABILITY

The reagent and standard are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 25 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear blue solution. If turbidity or precipitation has occurred, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**).Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or heparinized plasma, free of hemolysis and separated from cells as rapidly as possible. Do not use oxalates, citrate or EDTA as anticoagulant. Stability: 5 days at 4 - 8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL Reagent
For Standard Note 2	10 µL Standard + 1 mL Reagent
For Sample	10 µL Sample + 1 mL Reagent

You can prepare several samples simultaneously. Mix and incubate for 3 minutes at 37 °C or for 5 minutes at 15-25 °C (room temperature). After the incubation time, aspirate and measure the samples within 45 minutes after preparation.

PROGRAM SETUP

Program Name:	MgXB		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	1,5000 Note 1	
Main Filter:	510	nm	**Normal Low:**	1,6000 Note 4	mg/dL
Sub Filter:	None	nm	**Normal High:**	2,5000 Note 4	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	0,0500	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	6,6000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	3				

MEASURING RANGE

This method is linear from 0,05 mg/dL (detection limit) to 6,6 mg/dL (linearity limit). If the obtained results are greater than 6,6 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial).Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum or plasma samples.

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REF	HB014
VOL	2 x 125 mL
Standard	1 x 5 mL

Phosphorus

Phosphomolybdate. UV.

REAGENT PREPARATION AND STABILITY

Reagent and standard are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 340 nm ≥ 0,54, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator **(HBC03)** for calibration. Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls **(HBC01, HBC02).** Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma, free of hemolysis and separated from cells as rapidly as possible. Stability: 7 days at 2 - 8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL Reagent
For Standard Note 2	10 µL Standard + 1 mL Reagent
For Sample	10 µL Sample + 1 mL Reagent

Mix and incubate for **5 minutes** at 37 °C. Then aspirate to measure. You can prepare several samples simultaneously, as long as you respect the incubation times indicated.

PROGRAM SETUP

Program Name:	PHOSPH		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,5400 Note 1	
Main Filter:	340	nm	**Normal Low:**	2,5000	mg/dL
Sub Filter:	None	nm	**Normal High:**	5,0000	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	0,0000	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	35,0000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0 mg/dL (detection limit) to 35 mg/dL (linearity limit). If the obtained results are greater than 35 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator **(HBC03)** for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03)**.**
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HB015
VOL	2 x 50 mL
Standard	1 x 3 mL

Potassium Prec

NaTPB. Colorimetric. Precipitation

REAGENT PREPARATION AND STABILITY

Working reagent: Shake R2 (NaOH) before use. Mix proportionally 1:1 Reagent 1 and Reagent 2. After mixing, allow to stand for 30 minutes prior to use. **Before each use, the working reagent must be shaken.** The working reagent is stable for 7 days at 15-25 °C and 30 days at 2-8 °C.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
Handle standard very carefully to prevent contamination. Do not freeze or expose to elevated temperatures. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator Specific (HBC03-S) for calibration. Note 2
Control sera are recommended to monitor the performance of assay procedures. **Use Biochemistry Normal and Pathological Controls Specific (HBC01-S, HBC02-S).** Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Non hemolytic serum or heparin plasma.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

PRECIPITATION STEP:	
For Sample	50 µL Sample + 500 µL Reagent 3
Mix carefully. Centrifuge at high speed (± 5000 rpm) for 5-10 minutes. Separate the clear supernatant in a new test tube.	
TEST STEP: pipette into a cuvette:	
For Blank	1,0 mL Working reagent (R1 + R2)
For Standard Note 2	100 µL Standard + 1,0 mL Working reagent (R1 + R2)
For Sample	100 µL Supernatant + 1,0 mL Working reagent (R1 + R2)

You can prepare several samples simultaneously. To produce a homogeneous turbidity, the standard or the clear supernatant must be added to the surface of the working reagent in the test tube. Mix each test tube carefully before proceeding to the next sample. Mix and allow to stand for 5 min. After the incubation time, aspirate and measure all the samples within 30 min after addition of the working solution.

PROGRAM SETUP

Program Name:	POT		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	2,5000 Note 1	
Main Filter:	578	nm	**Normal Low:**	3,6000	mEq/L
Sub Filter:	None	nm	**Normal High:**	5,5000	mEq/L
Program Unit:	mEq/L		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mEq/L
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mEq/L
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mEq/L
Linearity Min:	2,0000	mEq/L	**Control P min:**	Enter value Note 3	mEq/L
Linearity Max:	10,0000	mEq/L	**Control P max:**	Enter value Note 3	mEq/L
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 2,0 mEq/L (detection limit) to 10,0 mEq/L (linearity limit). If the obtained results are greater than 10,0 mEq/L, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator **Specific** (**HBC03-S**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with **HBC03-S**).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum samples. For plasma, please check the insert for the values.

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REF	HB016
VOL	60 mL
Standard	1 x 2 mL

Sodium Prec

Mg-Uranylacetate. Colorimetric.

REAGENT PREPARATION AND STABILITY

Reagents are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Handle standard very carefully to prevent contamination. Precipitating solution becomes discolored when exposed to the light. Store protected from light. A slight turbidity does not affect the determination. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator **Specific (HBC03-S)** for calibration. Note 2
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls **Specific (HBC01-S, HBC02-S)**. Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

PRECIPITATION STEP:	
For Blank	-
For Standard Note 2	20 µL Standard + 1,0 mL Reagent 2
For Sample	20 µL Sample + 1,0 mL Reagent 2
Mix well. Incubate for 5 min. Then shake intensively for at least 30 sec. Then incubate for 30 min. Centrifuge for 5-10 min at 5000 rpm. Collect the supernatant in a new test tube	
TEST STEP: pipette into a cuvette:	
For Blank	20 µL Reagent 2 + 1,0 mL Reagent 1
For Standard	20 µL Supernatant + 1,0 mL Reagent 1
For Sample	20 µL Supernatant + 1,0 mL Reagent 1

You can prepare several samples simultaneously. Mix and incubate for 5 minutes at 15-25 °C (room temperature). After the incubation time, aspirate and measure the samples within 30 minutes after preparation.

PROGRAM SETUP

Program Name:	SOD		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	2,5000 Note 1	
Main Filter:	405	nm	**Normal Low:**	135,0000	mEq/L
Sub Filter:	None	nm	**Normal High:**	155,0000	mEq/L
Program Unit:	mEq/L		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mEq/L
Delay Time:	001	sec	**Factor:**	0,0000 Note 2	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mEq/L
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mEq/L
Linearity Min:	49,0000	mEq/L	**Control P min:**	Enter value Note 3	mEq/L
Linearity Max:	300,0000	mEq/L	**Control P max:**	Enter value Note 3	mEq/L
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 49 mEq/L (detection limit) to 300 mEq/L (linearity limit). If the obtained results are greater than 300 mEq/L, dilute the sample 1:2 with distilled water, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator **Specific (HBC03-S)** for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with **HBC03-S**).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HB0190	HB0190A	HB0190M
VOL	2 x 125 mL	8 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	4 x 5 mL	-

Total Protein

Biuret. Colorimetric

REAGENT PREPARATION AND STABILITY

The reagent and standard are ready for use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 546 nm ≥ 0,22, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Note 2
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range mentioned on the insert of the control, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Serum or heparinized plasma: stability: 1 month at 2-8 °C

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL R1 Biuret
For Standard Note 2	25 µL Standard + 1 mL R1 Biuret
For Sample	25 µL Sample + 1 mL R1 Biuret

You can prepare several samples simultaneously. Mix and incubate for 5 minutes at 37 °C or for 10 minutes at 15-25 °C (room temperature). After the incubation time, aspirate and measure the samples within 1 hour after preparation.

PROGRAM SETUP

Program Name:	TP		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,2200 Note 1	
Main Filter:	546	nm	**Normal Low:**	6,6000	g/dL
Sub Filter:	None	nm	**Normal High:**	8,3000	g/dL
Program Unit:	g/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	g/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	g/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	g/dL
Linearity Min:	0,0080	g/dL	**Control P min:**	Enter value Note 3	g/dL
Linearity Max:	15,0000	g/dL	**Control P max:**	Enter value Note 3	g/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,008 g/dL (detection limit) to 15 g/dL (linearity limit). If the obtained results are greater than 15 g/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HB020
VOL	2 x 125 mL
Standard	1 x 5 mL

Urine Total Protein

Pyrogallol-Red. Colorimetric.

REAGENT PREPARATION AND STABILITY

The reagents are ready for use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if the reagent blanc absorbance is out of range, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Note 2
Control sera are recommended to monitor the performance of assay procedures. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

- Urine 24h: Stability 8 days at 2-8 °C.
- Cerebrospinal Fluid (CSF): Stable 4 days at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL Reagent 1
For Standard Note 2	20 µL Standard + 1 mL Reagent 1
For Sample	20 µL Sample + 1 mL Reagent 1

You can prepare several samples simultaneously. Mix and incubate for 5 minutes at 37 °C or for 10 minutes at 15-25 °C (room temperature). After the incubation time, aspirate and measure the samples within 30 minutes after preparation.

PROGRAM SETUP

Program Name:	TPU		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,7000 Note 1	
Main Filter:	578	nm	**Normal Low:**	0,0000 Note 3	mg/dL
Sub Filter:	None	nm	**Normal High:**	10,0000 Note 3	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	0,0000	mg/dL
Dilution Factor:	1,0000		**Control N max:**	0,0000	mg/dL
Linearity Min:	0,9440	mg/dL	**Control P min:**	0,0000	mg/dL
Linearity Max:	400,0000	mg/dL	**Control P max:**	0,0000	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	3				

MEASURING RANGE

This method is linear from 0,944 mg/dL (detection limit) to 400 mg/dL (linearity limit). If the obtained results are greater than 400 mg/dL, dilute the sample 1:2 with NaCl 9 g/L, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial).
3. These values are for urine samples. For CSF samples, please check the insert for the values and sample preparation.

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REF	HBL060	HBL060M
VOL	2 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	-

Triglycerides

Enzymatic. Colorimetric. GPO-POD

REAGENT PREPARATION AND STABILITY

The reagent and standard are ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 510 nm ≥ 0,23, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Note 2 Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration.
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma The stability of the sample: 5 days at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL Reagent
For Standard Note 2	10 µL Standard + 1 mL Reagent
For Sample	10 µL Sample + 1 mL Reagent

You can prepare several samples simultaneously. Mix and incubate for 5 minutes at 37 °C or for 10 minutes at 15-25 °C (room temperature). After the incubation time, aspirate and measure the samples within 30 minutes after preparation.

PROGRAM SETUP

Program Name:	TRIGLn		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,2300 Note 1	
Main Filter:	510	nm	**Normal Low:**	35,0000	mg/dL
Sub Filter:	None	nm	**Normal High:**	150,0000	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	1,01	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	1000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 1,01 mg/dL (detection limit) to 1000 mg/dL (linearity limit). If the obtained results are greater than 1000 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.

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REF	HB029
VOL	2 x 125 mL
Standard	1 x 5 mL

Urea Lyo

Berthelot. Enzymatic. Colorimetric

REAGENT PREPARATION AND STABILITY

R2 and Standard are ready for use.
Dissolve the content of one bottle R3 Enzymes into one bottle R1 Buffer. Cap and mix gently to dissolve the contents.
The working solution (R1 + R3) is stable 4 weeks at 2-8 °C or 1 week at room temperature (15-25 °C).
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 580 nm ≥ 0,32, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Note 2 Alternatively, you can use the Biochemistry Calibrator **Specific (HBC03-S)** for calibration.
Control sera are recommended to monitor the performance of assay procedures. Use Biochemistry Normal and Pathological Controls **Specific (HBC01-S, HBC02-S**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

- Serum or heparinized plasma: do not use ammonium salts or fluoride as anticoagulants.
- Urine, diluted 1:50 with distilled water. Mix. Multiply results by 50 (dilution factor). Preserve urine samples at pH < 4. Urea is stable for 5 days at 2-8 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL Working reagent (R1+R3)
For Standard Note 2	10 µL Standard + 1 mL Working reagent (R1+R3)
For Sample	10 µL Sample + 1 mL Working reagent (R1+R3)
Mix, incubate at 37 °C for 5 min or 10 min at room temperature (15-25 °C). Then add Reagent 2:	
For Blank	1 mL Reagent 2
For Standard	1 mL Reagent 2
For Sample	1 mL Reagent 2

You can prepare several samples simultaneously. Mix and incubate for 5 minutes at 37 °C or for 10 minutes at 15-25 °C (room temperature). After the incubation time, aspirate and measure the samples within 30 minutes after preparation.

PROGRAM SETUP

Program Name:	UREA		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,3200 Note 1	
Main Filter:	578	nm	**Normal Low:**	15,0000 Note 4	mg/dL
Sub Filter:	None	nm	**Normal High:**	45,0000 Note 4	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	0,0010	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	225,0000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,001 mg/dL (detection limit) to 225 mg/dL (linearity limit). If the obtained results are greater than 225 mg/dL, dilute the sample 1:2 with NaCl 9 g/L, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator **Specific (HBC03-S)** for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with **HBC03-S**).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum or heparinized plasma samples. For urine, please check the insert for the values and sample preparation.

2021-09 (5.0) - Replaces all previous versions

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REF	HBL03
VOL	160 + 40 mL
Standard	1 x 5 mL

Urea

Urease-GLDH. UV. Kinetic

REAGENT PREPARATION AND STABILITY

Working reagent (WR): Mix 4 volumes of R1 (Buffer) with 1 volume of R2 (Enzymes). After mixing, allow to stand for 30 minutes prior to use. The stability of the working reagent is 1 month at 2-8 °C or 1 week at room temperature (15-25 °C). The standard is ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 340 nm < 1,00, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**).Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: **Serum or heparinized plasma:** do not use ammonium salts or fluoride as anticoagulants.

PROCEDURE

Make sure the reagents and samples are at room temperature. Then, pipette into a test tube:

For Blank	1,00 mL Working reagent (R1 + R2)
For Pre-rinse	20 µL Standard + 2,00 mL Working reagent (R1 + R2)
For Standard Note 2	10 µL Standard + 1,00 mL Working reagent (R1 + R2)
For Sample	10 µL Sample + 1,00 mL Working reagent (R1 + R2)

Before calibration, rinse the instrument with the Pre-rinse mixture after 2 min incubation at 37 °C using the **"**Wash" button. Note 5
Prepare, mix and measure **one sample at a time**. **Aspirate** the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample". Note 6

PROGRAM SETUP

Program Name:	UREAL		**Blank Low:**	1,0000 Note 1	
Program Method:	Two Point		**Blank High:**	2,5000 Note 1	
Main Filter:	340	nm	**Normal Low:**	15,0000 Note 4	mg/dL
Sub Filter:	None	nm	**Normal High:**	45,0000 Note 4	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	030	sec	**Factor:**	0,0000 Note 2	
Test time:	060	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	0,7430	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	400,0000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent Note 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,743 mg/dL (detection limit) to 400 mg/dL (linearity limit). If the obtained results are greater than 400 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum or heparinized plasma samples.
5. Prerinsing the flowcell with the Pre-rinse mixture is essential to improve the calibration accuracy.
6. Carry-over by pathological samples is possible. To prevent this, we recommend to follow a sample with concentration >50 mg/dL by aspiration of 0,8 mL Reagent Blank (working solution) before proceeding with the next sample.

2023-06 (6.0) - Replaces all previous versions

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REF	HBL030	HBL030M
VOL	240 + 60 mL	6 x 30 + 3 x 15 mL
Standard	1 x 5 mL	-

Urea

Urease-GLDH. UV. Kinetic

REAGENT PREPARATION AND STABILITY

Working reagent: Mix 4 volumes of R1 (Buffer) with 1 volume of R2 (Substrate). After mixing, allow to stand for 30 minutes prior to use. The working reagent can be stored at 2 – 8 °C or at room temperature (15 – 25 °C), and can be used as long as the blank absorbance is > 0,90 AU. The stability of the working reagent is at least 24h at 15 - 25 °C. The standard is ready to use.
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2 - 8 °C.
Handle standard very carefully to prevent contamination. The reagent should be a clear solution. If turbidity or precipitation has occurred or if blank absorbance at 340 nm ≤ 0,90 AU, the reagent should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls **(HBC01, HBC02).** Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

human serum or plasma : do not use ammonium salts or fluoride as anticoagulants. Stability of samples: 7 days at 4 - 25 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature. Then, pipette into a test tube:

For Blank	1,00 mL Working reagent (R1 + R2)
For Pre-rinse	20 µL Standard + 2,00 mL Working reagent (R1 + R2)
For Standard Note 2	10 µL Standard + 1,00 mL Working reagent (R1 + R2)
For Sample	10 µL Sample + 1,00 mL Working reagent (R1 + R2)

Before calibration, rinse the instrument with the Pre-rinse mixture after 2 min incubation at 37 °C using the "Wash" button. Note 5
Prepare, mix and measure **one sample at a time**. Aspirate the mixture in the instrument, **immediately** after addition of the working solution to the sample/calibrator. Wait with the preparation of the next sample until the instrument is finished with measuring the previous one. At this time, the instrument asks "Press PUSH Aspirate Sample". Note 6

PROGRAM SETUP

Program Name:	UREALn		**Blank Low:**	0,9000 Note 1	
Program Method:	Two Point		**Blank High:**	2,5000 Note 1	
Main Filter:	340	nm	**Normal Low:**	15,0000 Note 4	mg/dL
Sub Filter:	None	nm	**Normal High:**	45,0000 Note 4	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1 Note 2	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	030	sec	**Factor:**	0,0000 Note 2	
Test time:	060	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	3,1600	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	206,0000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent Note 1		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 3,16 mg/dL (detection limit) to 206 mg/dL (linearity limit). If the obtained results are greater than 206 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag. Programming reagent as blank gives you the advantage that deterioration of the reagent can be easily detected. Alternatively, you can program and aspirate distilled water as blank, with values for Blank Low: 0,0000 and Blank High: 0,0100.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03).
3. The control values can be found on the control sheets, delivered together with the control vials.
4. These values are for serum or heparinized plasma samples.
5. Prerinsing the flowcell with the Pre-rinse mixture is essential to improve the calibration accuracy.
6. Carry-over by pathological samples is possible. To prevent this, we recommend to follow a sample with concentration >50 mg/dL by aspiration of 0,8 mL Reagent Blank (working solution) before proceeding with the next sample.

2023-06 (2.0) - Replaces all previous versions

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REF	HBL020	HBL020M
VOL	2 x 125 mL	8 x 30 mL
Standard	1 x 5 mL	-

Uric Acid

Enzymatic. Colorimetric
URICASE-POD

REAGENT PREPARATION AND STABILITY

Mix equal volumes of R1 (Buffer) and R2 (Enzymes). This working reagent is stable for 2 months at 2-8 °C or 2 weeks at room temperature (15-25 °C).
All the components of the kit are stable up to the date of expiration as specified on the label, when stored tightly closed, protected from light and contaminations prevented during their use. Storage temperature for this kit is 2-8 °C.
Handle standard very carefully to prevent contamination. The reagents should be clear solutions. If turbidity or precipitation has occurred or if blank absorbance of the working reagent at 510 nm ≥ 0,12, the reagents should be discarded. Note 1

CALIBRATION & QUALITY CONTROL

For calibration, use the standard included in the kit. Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Note 2
Quality Control is recommended for the qualification of the reagents and to monitor the performance of assay procedures. Next to legal requirements, we recommend to perform Quality Control on a daily basis and after each calibration. Use Biochemistry Normal and Pathological Controls (**HBC01, HBC02**). Note 3 Prepare and measure these controls the same as samples.
If control values are found outside the defined range, check the instrument, reagents and calibrator for problems. Do not continue testing as the results will be invalid. Each laboratory should establish its own QC scheme and corrective actions if controls do not meet the acceptable tolerances.

SAMPLES

Sample type: human serum or plasma
Stability **3-5 days at** 2-8 °C or 6 months at -20 °C.

PROCEDURE

Make sure the reagents and samples are at room temperature.
Then, pipette into a test tube:

For Blank	1 mL Working reagent (R1 + R2)
For Standard Note 2	25 µL Standard + 1 mL Working reagent (R1 + R2)
For Sample	25 µL Sample + 1 mL Working reagent (R1 + R2)

You can prepare several samples simultaneously. Mix and incubate for 5 minutes at 37 °C or for 10 minutes at 15-25 °C (room temperature). After the incubation time, aspirate and measure the samples within 45 minutes after preparation.

PROGRAM SETUP

Program Name:	UAL		**Blank Low:**	0,0000 Note 1	
Program Method:	End Point		**Blank High:**	0,1200 Note 1	
Main Filter:	510	nm	**Normal Low:**	2,5000 Note 4	mg/dL
Sub Filter:	None	nm	**Normal High:**	7,7000 Note 4	mg/dL
Program Unit:	mg/dL		**Num of STD:**	1	
Aspiration volume:	0800	µL	**CONC:**	value: see vial Note 2	mg/dL
Delay Time:	001	sec	**Factor:**	0,0000	
Test time:	003	sec	**Control N min:**	Enter value Note 3	mg/dL
Dilution Factor:	1,0000		**Control N max:**	Enter value Note 3	mg/dL
Linearity Min:	0,1500	mg/dL	**Control P min:**	Enter value Note 3	mg/dL
Linearity Max:	25,0000	mg/dL	**Control P max:**	Enter value Note 3	mg/dL
Blank:	Reagent		**Cuvette Temp:**	37	°C
Num of Blank:	1				

MEASURING RANGE

This method is linear from 0,15 mg/dL (detection limit) to 25 mg/dL (linearity limit). If the obtained results are greater than 25 mg/dL, dilute the sample 1:2 with saline solution, repeat the determination, and multiply the result by factor 2.

NOTES

1. If the blank absorbance is out of range, the instrument will give you a flag.
2. Program the value of the standard (see vial). Alternatively, you can use the Biochemistry Calibrator (**HBC03**) for calibration. Program NUM of STD (1) and CONC (as mentioned on the insert provided with HBC03: fill the values for monochromatic methods).
3. The control values can be found on the control sheets, delivered together with the control vials. Fill the values for semi-automates (monochromatic).
4. These values are for serum or plasma samples.

2021-09 (5.1) - Replaces all previous versions

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LIN340

Once every year, CYANSmart should be validated to assure correct results.

Validation of CYANSmart is based on two principles:
- Verification of linearity
- Verification of precision

This is done by measuring two reference solutions at different wavelengths:
- Potassium dichromate at 340 nm using the LIN340 method
- Ammonium cobalt(II) sulfate hexahydrate at 510 nm using the LIN510 method

REAGENT PREPARATION AND STABILITY

Prepare a dilution series of Potassium Dichromate $K_2Cr_2O_7$ as measuring solution.
See service manual for detailed procedure.

PROGRAM SETUP

Program Name:	LIN340		**Blank Low:**	0,0000	
Program Method:	End Point		**Blank High:**	0,0100	
Main Filter:	340	nm	**Normal Low:**	0,2000	g/L
Sub Filter:	None	nm	**Normal High:**	1,7000	g/L
Program Unit:	g/L		**Num of STD:**	0	
Aspiration volume:	0800	µL	**CONC:**	0,0000	g/L
Delay Time:	001	sec	**Factor:**	1,0000	
Test time:	003	sec	**Control N min:**	0,0000	g/L
Dilution Factor:	1,0000		**Control N max:**	0,0000	g/L
Linearity Min:	0,0050	g/dL	**Control P min:**	0,0000	g/L
Linearity Max:	2,5000	g/dL	**Control P max:**	0,0000	g/L
Blank:	Water		**Cuvette Temp:**	37	°C
Num of Blank:	1				

2021-02 (4.0) - Replaces all previous versions

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LIN510

Once every year, CYANSmart should be validated to assure correct results.

Validation of CYANSmart is based on two principles:
- Verification of linearity
- Verification of precision

This is done by measuring two reference solutions at different wavelengths:
- Potassium dichromate at 340 nm using the LIN340 method
- Ammonium cobalt(II) sulfate hexahydrate at 510 nm using the LIN510 method

REAGENT PREPARATION AND STABILITY

Prepare a dilution series of Ammonium Cobalt(II) Sulfate Hexahydrate as measuring solution.
See service manual for detailed procedure.

PROGRAM SETUP

Program Name:	LIN510		**Blank Low:**	0,0000	
Program Method:	End Point		**Blank High:**	0,0100	
Main Filter:	510	nm	**Normal Low:**	0,3000	g/L
Sub Filter:	None	nm	**Normal High:**	1,9000	g/L
Program Unit:	g/L		**Num of STD:**	0	
Aspiration volume:	0800	µL	**CONC:**	0,0000	g/L
Delay Time:	001	sec	**Factor:**	1,0000	
Test time:	003	sec	**Control N min:**	0,0000	g/L
Dilution Factor:	1,0000		**Control N max:**	0,0000	g/L
Linearity Min:	0,0380	g/dL	**Control P min:**	0,0000	g/L
Linearity Max:	5,8000	g/dL	**Control P max:**	0,0000	g/L
Blank:	Water		**Cuvette Temp:**	37	°C
Num of Blank:	1				

2023-09 (4.1) - Replaces all previous versions

CE

CYPRESS DIAGNOSTICS

CY009 English

CYANSmart

Semi-Automatic Biochemistry Analyzer

ISO 13485-2016

To all Healthcare Professionals,

Thank you for your interest. We appreciate it!

Cypress Diagnostics provides the tools and solutions that let clinical laboratories worldwide deliver clear and precise diagnostic results.
We manufacture the equipment needed for handling the samples, analyzers to perform the tests, reagents to carry out the tests and - increasingly often - the software platforms to report the results.

Cypress Diagnostics supplies clinical laboratories.

We are a quality-oriented company with ISO certification and CE-approved products. Our production facility is located in Hulshout, Belgium. Our products are preferred and appreciated by users in more than 100 countries worldwide. Cypress Diagnostics is a family-owned business, founded in 1995 in Leuven, Belgium.

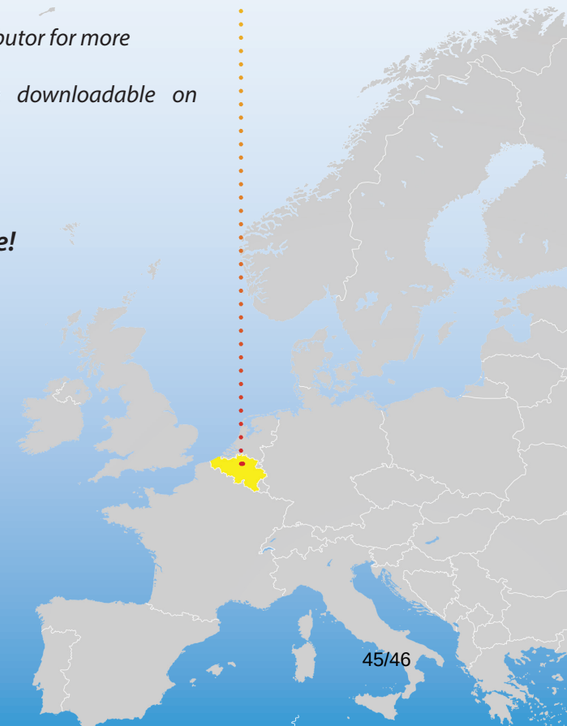
We work exclusively with selected and trained distributors. We sell high-quality instruments and customer service is an integral part of our quality policy.
All our products come with an aftersales and performance guarantee.

Please feel free to contact our local distributor for more information.
Our latest inserts and catalogs are downloadable on www.diagnostics.be .

Test the difference!

Kind regards,

The Cypress Diagnostics Team



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CYANSmart

The CYANSmart is an an easy-to-operate semi-automatic biochemistry analyzer. This new in vitro diagnostic instrument is designed to have powerful features in a compact, independent unit.

Cost savings:
- Minimum reaction volume of 500 µl means decreased costs per test
- Limited consumables required
- Extra items included on delivery (two fuses, five paper rolls, a spare lamp, and pump tube)
- Integrated incubator, printer, pump, and flow cell
- Long life lamp, further extended by power saving / standby mode
- Robustness of the analyzer with minimal daily maintenance
- Analyzer guides the user and so reduces mistakes

Flexibility:
- On-board printer for printing automatically or on request printing
- Seven wavelengths (340, 405, 492, 510, 546, 578, and 620 nm filters) cover all clinical diagnostic applications
- Five calculation methods (absorbance, endpoint, two-point, kinetic, bichromatic) and three calibration methods (factor, calibrator, and multi-point calibration) provide plenty processing options with one system
- Three blank options (sample blank, reagent blank, and water) provide background correction of the reagent and sample coloration

Convenience:
- Easy tracking of all the results from each patient by a unique identifier
- All Cypress Diagnostics biochemistry reagents are preprogrammed on delivery
- 180 open channels are programmable to allow for other user-defined tests
- Memory for up to 6000 sample results
- Large font size, easily legible and read with little effort
- LCD touch screen with virtual alphanumeric keyboard
- Multilingual capability
- Minimal daily maintenance

Desktop Software:
- Clear reporting with patient overview with flags and reference ranges
- Easier reporting and result sharing (email & network printing)
- Elimination of transcription errors (no more manual data entry)
- Data back-up
- Convenient upgrade of the methods by quick upload

ISO 13485-2016

Technical Specifications

Optical system
- Flow cell: 32 µl, 10 mm light path
- Min. reaction volume: 500 µl per test
- Halogen lamp 6V/10W
- Photo detector: Silicon based (range 300 – 900 nm)
- Measurement range: 0,000 – 3,500 Abs
- Wavelength: 340 – 620 nm
- Wavelength selection: Automatic via 7 interference filters: 340, 405, 492, 510, 546, 578 & 620 nm

Flow cell
- 25 °C, 30 °C, 37 °C, ambient temperature
- Peltier element
- Thermostatic control: PID controlled, ±0,5 °C
- 10 mm

Incubator
- 20 places with 14 mm diameter
- 37 °C
- Thermostatic control: PID controlled, ± 1 °C

Display
- Back-illuminated LCD
- Touchscreen calibration possible
- 800 x 480 pixels (screen size: 7 inch)

Printer
- Automatic or on-demand printing
- Built-in thermal printer
- 24 characters per line
- Prints graphs

Power supply
- AC 110/220 V - 50/60 Hz
- Automatic voltage and frequency switch
- Grounding required
- Power: 200 VA, reduced to 140 VA in standby mode
- Power save / Standby mode

Software
- Unique 16 digit patient ID
- Memory: 180 test methods and 6000 sample test results
- Cypress Diagnostics methods preprogrammed on delivery
- Languages: English, French, Spanish
- QC: 2 controls programmable plus a separate QC results menu with (printable) graphs
- Calculation methods: absorbance, endpoint, two-point, kinetic, bichromatic
- Calibration methods: factor, calibrator and multi-point calibration
- Blank options: sample blank, reagent blank and water
- Incubation time: 0 – 999 seconds
- Reading time: 3 – 999 seconds

Weight and dimensions
- Instrument: 9 kg, 20 x 43,5 x 41,5 cm (H x W x L)

Environmental requirements
- Ambient temperature: 15 °C – 30 °C
- Relative humidity: 30 % - 70 %

Order code:
- CY009: CYANSmart

Contact: e-mail: cypress@diagnostics.be
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Nijverheidsstraat 8
2235 Hulshout
Belgium
URL: www.diagnostics.be

Your Distributor

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