KOVA® Liqua-Trol™ with Microscopics Level I (Abnormal) Urinalysis Control

Revised: 2/11/16 Microscopic cells 77 Elektronika KFT only

KOVA* Liqua-Trol** Lot No: **K301234** Expiration Date: **2017-10**

CONSTITUENT	REAGENT TEST STRIP RESULTS [1]									
	SIEMENS REAGENT STRIP [a]								IRIS REAGENT STRIP [i]	
	Visual	Clinitek®50	Clinitek®STATUS	Clinitek®100	Clinitek® 500 / Advantus	Clinitek®Atlas			iChem®VELOCITY™	
pH	7.0 - 8.0	7.0 - 8.0	7.0 - 8.0	7.0 - 8.0	7.0 - 8.0	7.0 - 8.0			7.0 - 8.0	
Protein	Trace - ≥ 300 mg/dL	Trace - ≥ 300 mg/dL	Trace - ≥ 300 mg/dL	Trace - ≥ 300 mg/dL	Trace - ≥ 300 mg/dL	Trace - ≥ 300 mg/dL			30 - ≥ 500	mg/dL
Glucose	100 - 1000 mg/dL	100 - ≥ 1000 mg/dL	100 - ≥ 1000 mg/dL	Trace - ≥ 1000 mg/dL	100 - ≥ 1000 mg/dL	100 - ≥ 1000 mg/dL			50 - ≥ 500	mg/dL
Ketones	5 - 160 mg/dL	Trace - ≥ 80 mg/dL	Trace - ≥ 160 mg/dL	Trace - ≥ 80 mg/dL	Trace - ≥ 80 mg/dL	Trace - ≥ 80 mg/dL			5 - 80	mg/dL
Bilirubin	1 - 3 + [6]	Small - Large	Small - Large	Small - Large	Small - Large	Small - Large			Negative - 4	mg/dL
Blood (hemoglobin)	Trace - 3 + [8]	Trace-Lysed - Large	Trace-Lysed - Large	Trace - Large	Trace-Lysed - Large	Trace - Large			0.03 - ≥ 1	Ery/µL
Nitrite	Positive	Positive	Positive	Positive	Positive	Positive			Positive	
Urobilinogen	2 - 8 EU/dL	2.0 - ≥ 8.0 EU/dL	2.0 - ≥ 8.0 EU/dL	2.0 - ≥ 8.0 EU/dL	2.0 - ≥ 8.0 EU/dL	2.0 - ≥ 8.0 EU/dL			2.0 - 4.0	mg/dL
Specific Gravity	1.010 - 1.030	1.015 - ≥ 1.030	1.015 - ≥ 1.030	1.020 - ≥ 1.030	1.015 - ≥ 1.030	1.020 - ≥ 1.030 [9]			1.020 - 1.030 [9]	
Leukocyte Esterase [5]	Trace - 3 +	Trace - Large	Trace - Large	Trace - Large	Trace - Large	Trace - Large			25 - 500	Leu/µL
Microalbumin	Kova International, Inc. now offers a microalbumin control: KOVA-Trol II Low Abnormal - P/N 87130 (15mL) and 87128 (60mL)									
Creatinine	100 - 300 mg/dL	100 - 300 mg/dL	100 - 300 mg/dL	100 - 300 mg/dL	100 - 300 mg/dL	N/A			N/A	
Ascorbic Acid	N/A	N/A	N/A	N/A	N/A	N/A			Negative	

PHYSICAL CHARACTERISTICS

Property	Value Range	Method
Appearance	Clear - Slightly Cloudy	Visual
Color	Amber - Red	Visual
Specific Gravity	1.025 - 1.029	Refractometer (Room Temp.)
Osmolality	775 - 875	mOsm Freezing Pt. Depression
pH	7.0 - 8.0	pH meter

ALTERNATIVE TESTS

Constituent/Method	Value Range
Glucose/Clinitest [h, 7] (5 drop)	1/4 - 1 % Positive: Purple - Green
Bilirubin/Ictotest [a]	Positive: Pink - Purple
Ketone/Acetest [h]	Small - Large
Protein/Sulfosalicylic Acid (3%)	
Qualitative	Trace - 4+ Pink - Orange

MICROSCOPIC QUALITY CONTROL CELL COUNTS [4,5]

Constituent	Fixed Rotor	Swing Rotor	Iris [i] iQ200	sediMAX,UriSed,UriSed2 [c] COBIO-XS, COBIO-S120
Qualitative [f]				
Red Cells/hpf	7 - 59	8 - 87	---	9 - 57
White Cells/hpf	8 - 59	7 - 78	---	9 - 52
Quantitative [g]				
Red Cells/µL †	56 - 141	92 - 217	61 - 82	40 - 250
White Cells/µL †	41 - 145	84 - 184	41 - 60	40 - 225
Crystals***	Present	Present	---	---
Casts (low power)	<1	<1	---	---
Bacteria	Present	Present	---	---

† Iris iQ200 cells/hpf.

*** Calcium oxalate, calcium phosphate, amorphous material. Urinary artifacts may be present. Any mucus threads observed are artifactual.

PREGNANCY TESTING

Method	Result
Beckman Coulter ICON® 20 hCG [e]	Negative
Quidel QuickVue® hCG [d]	Negative
Siemens Clinitest® hCG [a]	Not Assigned

Note: Other manufacturers' methods will work and should be confirmed by the laboratory.

Additional value assignments on other side.

KOVA® Liqua-Trol™ with Microscopics Level I (Abnormal) Urinalysis Control

KOVA* Liqua-Trol** Lot No: **K301234** Expiration Date: **2017-10**

CONSTITUENT	REAGENT TEST STRIP RESULTS [1]									
	ROCHE REAGENT STRIP [b]								77 ELEKTRONIKA REAGENT STRIP [c] HandUReader, DocUReader, DocUReader 2, LabUReader, LabUReader Plus, LabUReader Plus 2, LabUMat, LabUMat 2, Visual Reading	
	Combur-Test® Visual	Chemstrip® Visual	Chemstrip Criterion II™	Chemstrip® UA	URISYS 1800™	URISYS 1100™	Cobas® U 411	URISYS® 2400		
pH	7 - 8	7 - 8	7 - 8	7.0 - 8.0	7 - 8	7 - 8	7 - 8	7 - 8	6 - 8	6 - 8
Protein	30 - 500 mg/dL	Trace - 500 mg/dL	15 - 500 mg/dL	15 - 500 mg/dL	25 - 500 mg/dL	Trace - 500 mg/dL	15 - 500 mg/dL[11] 25 - 500 mg/dL[11]	25 - 500 mg/dL	30 - 500 mg/dL[10]	+ - +++ [10]
Glucose	100 - 1000 mg/dL	100 - 1000 mg/dL	100 - 1000 mg/dL	100 - 1000 mg/dL	100 - 1000 mg/dL	100 - > 1000 mg/dL	100 - 1000 mg/dL[11] 100 - 1000 mg/dL[11]	100 - 1000 mg/dL	150 - 1000 mg/dL	++ - ++++
Ketones	1 - 3 + [2]	1 - 3 + [2]	5 - 150 mg/dL	5 - 150 mg/dL	5 - 150 mg/dL	15 - 150 mg/dL	5 - 150 mg/dL	5 - 150 mg/dL	15 - 150 mg/dL	+ - +++
Bilirubin	1 - 3 +	1 - 3 +	1 - 6 mg/dL	1 - 6 mg/dL	1 - 6 mg/dL	1 - 6 mg/dL	1 - 6 mg/dL	1 - 6 mg/dL	1 - 6 mg/dL	+ - +++
Blood (hemoglobin)	5-10 - 250 Ery/µL	Trace - 250 Ery/µL	10 - 250 Ery/µL	10 - 250 Ery/µL	10 - 250 Ery/µL	Trace - 250 Ery/µL	10 - 250 Ery/µL	10 - 250 Ery/µL	10 - 300 Ery/µL	+ - +++
Nitrite	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	+
Urobilinogen	Positive [3]	Positive [3]	4 - 12 mg/dL	4 - 12 mg/dL	4 - 12 mg/dL	4 - ≥ 12 mg/dL	4 - 12 mg/dL	4 - 12 mg/dL	Normal - 12 mg/dL [10]	Normal - ++++ [10]
Specific Gravity	1.010 - 1.030	1.010 - 1.030	1.010 - 1.030	1.010 - 1.030	1.005 - 1.030	1.005 - 1.030	1.005 - 1.030	1.020 - 1.030 [9]	1.010 - 1.030	1.010 - 1.030
Leukocyte Esterase [5]	10-25 - 500 Leuco/µL	Trace - 2 +	25 - 500 Leu/µL	25 - 500 Leu/µL	25 - 500 Leu/µL	25 - 500 Leu/µL	25 - 500 Leu/µL	25 - 500 Leu/µL	25 - 500 Leu/µL [10]	+ - +++ [10]
Microalbumin	Kova International, Inc. now offers a microalbumin control: KOVA-Trol II Low Abnormal - P/N 87130 (15mL) and 87128 (60mL)									
Creatinine	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ascorbic Acid	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Negative	Negative

1. Methodology changes or variability in reagent strip lots can influence Liqua-Trol recoveries. It is recommended that the value listed here be used as guidelines until the laboratory has established its own quality control ranges.
2. An atypical brownish-purple visual result may be noted on the ketone pad. Use the color intensity to interpret the results.
3. A pink-lavender visual result on the Roche Chemstrip urobilinogen pad should be interpreted as positive.
4. The cell count ranges apply to a microscopic field viewed using a 10x wide eyepiece and a 40x objective lens. The approximate diameter of such a field under high power magnification is 0.50 mm; therefore, an appropriate correction factor should be applied when a microscope with a different field size is used in order to maintain consistency in reporting results.
5. A microscopic examination of the sedimentation is recommended in conjunction with a screening test for leukocyte esterase to detect lysed leukocytes. Testing for leukocyte esterase should not be used to replace microscopic analysis as significant and often critical pathologically diagnostic elements will go undetected.
6. An atypical pink-reddish brown visual result may be noted on the Siemens bilirubin pad. Use the color intensity to interpret the results.
7. An atypical purple residue may be observed with the Siemens Clinitest.
8. An atypical navy-blue visual result may be observed on the blood pad. Use the color intensity to interpret the results.
9. Value assigned with normal system settings at .005 increments.
10. An atypical color for protein, urobilinogen and leukocyte esterase.
11. Conventional units assigned in US mg/dL and European mg/dL.

Note: Particulate may form during storage. Gently swirl the control before use to assure good mixing and resuspension of the microscopic constituents.

P/N 91070-20 9/15 Additional value assignments on other side.

a Siemens Medical Solutions Diagnostics
b Roche Diagnostics Corporation
c 77 Elektronika KFT **(For International Use Only)**
d Quidel Corporation
e Beckman Coulter, Inc.
f Using KOVA® System with KOVA Slide II, KOVA Glasstic® Slide 10
g Using KOVA® System with KOVA Glasstic® Slide 10 with Grids
h Bayer HealthCare LLC
i Iris Diagnostics

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