

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

KOVA Liqua-Trol		Lot No: K302690		Expiration Date: 2020-02						
CONSTITUENT	REAGENT TEST STRIP RESULTS ¹									
	SIEMENS REAGENT STRIP ^a							BIOSYS ^j UriScan Optima™ and Optima II™ PSS® Select Consult® Diagnostics		IRIS REAGENT STRIP ⁱ iChem® Velocity™
	Visual	Clinitek®50	Clinitek®STATUS ¹¹	Clinitek®100	Clinitek® 500 / Advantus	Clinitek®Atlas	Clinitek®Novus			
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		6.5 - 7.0	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	Trace - ≥ 1000 mg/dL		10.0 - 300 mg/dL	30 - ≥ 500 mg/dL
Glucose	100 - 2000 mg/dL	100 - ≥ 1000 mg/dL	100 - ≥ 1000 mg/dL	Trace - ≥ 1000 mg/dL	100 - ≥ 1000 mg/dL	100 - ≥ 1000 mg/dL	100 - ≥ 1000 mg/dL		100 - 2000 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	Trace - ≥ 160 mg/dL		5.0 - 100 mg/dL	5 - 80 mg/dL
Bilirubin	1 - 3 + ⁶	Small - Large	Small - Large	Small - Large	Small - Large	Small - Large	Small - Large		0.5 - 3.0 mg/dL	2 - 4 mg/dL
Blood (hemoglobin)	Trace - 3 + ⁸	Trace - Lysed - Large	Trace - Lysed - Large	Trace - Large	Trace - Lysed - Large	Trace - Large	Trace - Large		5.0 - 250 RBC/μL	0.03 - ≥ 1 Ery/μL
Nitrite	Positive	Positive	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	1.0 - ≥ 8.0 EU/dL		1.0 - 12.0 mg/dL	2.0 - 4.0 mg/dL
Specific Gravity	1.015 - 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		1.010 - ≥ 1.030	1.020 - 1.030 ⁹
Leukocyte Esterase ⁵	Trace - 3+	Trace - Large	Trace - Large	Trace - Large	Trace - Large	Trace - Large	Trace - Large		10.0 - 500 WBC/μL	25 - 500 Leu/μL
Microalbumin	Kova International, Inc. offers a microalbumin control: KOVA-Trol II Low Abnormal - P/N 87130 (15mL) and 87428 (60mL)									
Creatinine	100 - 300 mg/dL	100 - 300 mg/dL	100 - 300 mg/dL	100 - 300 mg/dL	100 - 300 mg/dL	N/A	100 - ≥ 300 mg/dL ¹²		N/A	N/A
Ascorbic Acid	N/A	N/A	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	1.024 - 1.028	Refractometer (Room Temp.)
Osmolality	775 - 875 mOsm Freezing Pt. Depression	
pH	7.0 - 8.0	pH meter

ALTERNATIVE TESTS

Constituent/Method	Value Range
Bilirubin/Ictotest ^a	Positive: Pink - Purple
Protein/Sulfosalicylic Acid (3%)	
Qualitative	Trace - 4 + Pink - Orange

MICROSCOPIC QUALITY CONTROL CELL COUNTS ^{4,5}

Constituent	Fixed Rotor	Swing Rotor	DIRU ^h FUS-100	Iris ⁱ iQ200	Siemens ^a Atellica UAS 800	UriSed Variants ^c COBIO Variants
Qualitative ^f						
Red Cells/hpf	18 - 69	25 - 98	---	---	64 - 91	11 - 144
White Cells/hpf	23 - 69	29 - 92	---	---	46 - 58	13 - 96
Quantitative ^g						
Red Cells/μL [†]	125 - 250	197 - 365	---	4 - 8	280 - 400	50 - 630
White Cells/μL [†]	100 - 233	179 - 353	---	43 - 51	201 - 254	60 - 420
Crystals ^{***}	Present	Present	---	---	---	Present
Casts (low power)	< 1	< 1	---	---	---	< 1
Bacteria	Present	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 Clinitek® hCG ^a	Not Assigned

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

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CONSTITUENT	REAGENT TEST STRIP RESULTS ¹									
	ROCHE REAGENT STRIP ^b							77 ELEKTRONIKA REAGENT STRIP ^c		
	Combur-Test [®] Visual	Chemstrip [®] Visual	Chemstrip Criterion II [™]	URISYS 1800 [™]	URISYS 1100 [™]	Cobas [®] U 411	URISYS [®] 2400	ChoiceLine 10 [®] Visual	HandUReader, DocUReader, DocUReader 2, LabUReader, LabUReader Plus, LabUReader Plus 2, LabUMat, LabUMat 2, Visual Reading	
pH	7 - 8	7 - 8	7 - 8	7 - 8	7 - 8	7 - 8	7 - 8	7.0 - 8.0	6 - 8	6 - 8
Protein	30 - 500 mg/dL	Trace - 500 mg/dL	15 - 500 mg/dL	25 - 500 mg/dL	Trace - 500 mg/dL	15 - 500 mg/dL ⁷ 25 - 500 mg/dL ⁷	25 - 500 mg/dL	15 - 1000 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 ⁷ 100 - 1000 mg/dL ⁷	100 - 1000 mg/dL	100 - 1000 mg/dL	150 - 1000 mg/dL	++ - ++++
Ketones	1 - 3 + ²	1 - 3 + ²	5 - 150 mg/dL	5 - 150 mg/dL	15 - 150 mg/dL	5 - 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 - 3 +	1 - 6 mg/dL	+ - +++
Blood (hemoglobin)	5 - 10 - 250 Ery/μL	Trace - 250 Ery/μL	10 - 250 Ery/μL	10 - 250 Ery/μL	Trace - 250 Ery/μL	10 - 250 Ery/μL	10 - 250 Ery/μL	5 - 10 - 250 Ery/μL	10 - 300 Ery/μL	+ - +++
Nitrite	Positive	Positive	Positive	Positive	Positive	Positive	Positive	1 - 2 +	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	Positive	Normal - 12 mg/dL ¹⁰	Normal - ++++ ¹⁰
Specific Gravity	1.005 - 1.030	1.005 - 1.030	1.010 - 1.030	1.010 - 1.030	1.010 - 1.030	1.010 - 1.030	1.020 - 1.030 ⁹	1.005 - 1.030	1.005 - 1.035	1.005 - 1.035
Leukocyte Esterase ⁵	10 - 25 - 50 Leu/μL	Trace - 2+	25 - 500 Leu/μL	25 - 500 Leu/μL	25 - 500 Leu/μL	25 - 500 Leu/μL	25 - 500 Leu/μL	15 - 500 Leu/μL	Negative - 500 Leu/μL ¹⁰	Negative - +++ ¹⁰
Microalbumin	Kova International, Inc. offers a microalbumin control: KOVA-Trol II Low Abnormal - P/N 87130 (15mL) and 87428 (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

- 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.
- An atypical brownish-purple visual result may be noted on the ketone pad. Use the color intensity to interpret the results.
- A pink-lavender visual result on the Roche Chemstrip urobilinogen pad should be interpreted as positive.
- 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.
- 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.
- An atypical pink-reddish brown visual result may be noted on the Siemens bilirubin pad. Use the color intensity to interpret the results.
- Conventional units assigned in US mg/dL and European mg/dL.
- An atypical navy-blue visual result may be observed on the blood pad. Use the color intensity to interpret the results.
- Value assigned with normal system settings at .005 increments.
- An atypical color for protein, urobilinogen and leukocyte esterase.
- Value Assignment done with software 1.900:002.
- Values assigned for international use only. **Note: Particulate may form during storage. Gently swirl the control before use to assure good mixing and resuspension of the microscopic constituents.**

- Siemens Medical Solutions Diagnostics
- Roche Diagnostics Corporation
- 77 Elektronika KFT (**For International Use Only**)
- Quidel Corporation
- Beckman Coulter, Inc
- Using KOVA[®] System with KOVA[®] Slide II, KOVA[®] Glasstic[®] Slide 10
- Using KOVA[®] System with KOVA[®] Glasstic[®] Slide 10 with Grids
- DIRUI Industrial Co., Ltd (**For International Use Only**)
- Iris Diagnostics
- BIOSYS Laboratories, Inc
- ARKRAY, Inc
- McKesson Medical-Surgical / Consult Diagnostics



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CONSTITUENT	REAGENT TEST STRIP RESULTS ¹				
	DIRUI ^h DIRUI REAGENT STRIP [®] DIRUI H-800	McKesson ^l Consult [®] Diagnostics REAGENT STRIPS 120 Urine Analyzer	ARKRAY ^k Aution Reagent Strip Aution Hybrid [™] AU-4050		
pH	7.0 - 8.0	7.0 - 8.0	7.0 - 8.0		
Protein	Trace - ≥ 300 mg/dL	15 - 300 mg/dL	10 - 600 - over mg/dL		
Glucose	100 - ≥ 1000 mg/dL	100 - 1000 mg/dL	70 - 1000 - over mg/dL		
Ketones	5 - ≥ 80 mg/dL	5 - 80 mg/dL	5 - 150 - over mg/dL		
Bilirubin	1 - ≥ 6 mg/dL	1 - 4 mg/dL	0.5 - 10.0 - over mg/dL		
Blood (hemoglobin)	10 - ≥ 200 Ery/μL	10 - 200 Ery/μL	0.03 - 1 - over mg/dL		
Nitrite	Positive	Positive	1 - 2 +		
Urobilinogen	0.2 - ≥ 8 mg/dL	2 - 8 mg/dL	2 - 12- over mg/dL		
Specific Gravity	1.020 - 1.035	1.015 - 1.030	1.020 - 1.030 ⁹		
Leukocyte Esterase ⁵	15 - ≥ 500 Leu/μL	15 - 500 Leu/μL	25 - 500 Leu/μL		
Microalbumin	Kova International, Inc. offers a microalbumin control: KOVA-Trol II Low Abnormal - P/N 87130 (15mL) and 87428 (60mL)				
Creatinine	100 - 300 mg/dL	N/A	N/A		
Ascorbic Acid	N/A	N/A	N/A		

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