

IDEXX Urine Sediment Guide

IDEXX UA™ Strips Test Menu Descriptions

Compensation Pad (COMP): This white pad is used by the IDEXX VetLab UA Analyzer to compensate for the intrinsic color of the urine that might affect the evaluation of the parameters.

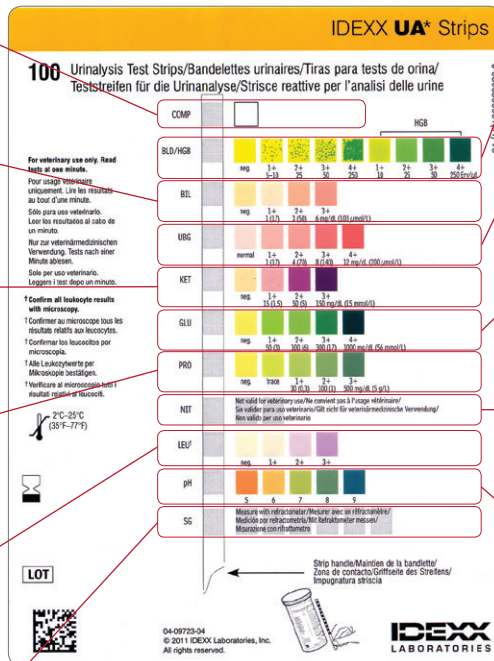
Bilirubin (BIL): In dogs (especially male dogs), bilirubinuria is common even under normal conditions, but any bilirubinuria in cats is significant. Bilirubinuria usually precedes bilirubinemia because urine is commonly concentrated (hypersthenuric) compared to plasma.

Ketones (KET): Urine ketones are produced by the breakdown of lipids. The most common causes for increased ketone values is diabetic ketoacidosis. Less common causes include prolonged fasting, starvation and low-carbohydrate diets.

Protein (PRO): Proteinuria may indicate both renal and nonrenal disease. If significant proteinuria is detected and there is an inactive sediment, urine protein:creatinine ratio (UPC) should be performed to obtain protein quantification for accurate assessment and monitoring.

Leukocytes (LEU): The leukocyte test pad detects the enzyme leukocyte esterase, not individual leukocytes. The leukocyte parameter should not be used to test urine from cats. All test results for dogs should be confirmed with microscopy because of a high number of false-negative results.

Specific Gravity (SG): *The urine specific gravity should be measured with a refractometer*, which measures the density of the urine relative to the density of water. This value should be interpreted in light of the patient's hydration status and blood urea nitrogen (BUN) and creatinine levels.



Blood/Hemoglobin (BLD/HGB): The blood/heme reaction detects heme groups found within hemoglobin and myoglobin. The test may be positive because of hematuria, hemoglobinuria or myoglobinuria.

Urobilinogen (UBG): Intestinal bacteria convert conjugated bilirubin to urobilinogen. A fresh urine sample is necessary for evaluation. There is little correlation between the presence of urobilinogen and liver disease.

Glucose (GLU): *Glucose must exceed the renal threshold for reabsorption to be detected in dogs and cats.* This most commonly occurs with diabetic patients and occasionally with stress. This value should be evaluated in light of the patient's clinical status and blood glucose value.

Nitrite (NIT): The nitrite test is not valid for veterinary use because of false-positive and false-negative results. The majority of bacterial infections in dogs and cats are not caused by organisms that reduce nitrate to nitrite.

pH: Urine pH is determined by the kidney's ability to regulate hydrogen ion and bicarbonate concentrations within the blood. Urine pH may reflect the animal's acid-base status if hydration status and overall plasma electrolyte balance are not markedly disturbed.

Interpretation (Expected Values)

Analyte	Normal	Reporting Results
WBC	0–5/HPF	Number/HPF
RBC	0–5/HPF	Number/HPF
Epithelial Cells	0–Few/HPF	Number/HPF
Crystals	Variable	Number/LPF
Casts	0–Few/LPF	Number/LPF
Bacteria	0–Few/HPF	1+ to 4+/HPF

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All images, unless otherwise indicated, are representative of a high power field of view (40x objective field of view)

Cells

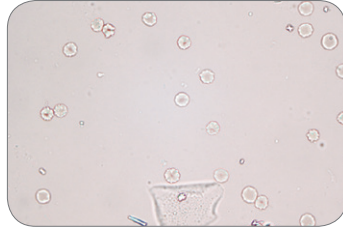


Figure 1 Erythrocytes and one squamous epithelial cell

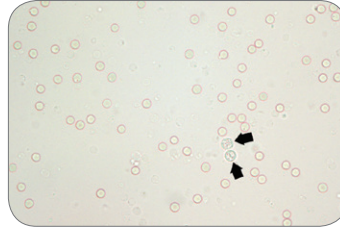


Figure 2 Erythrocytes and two leukocytes (black arrows)

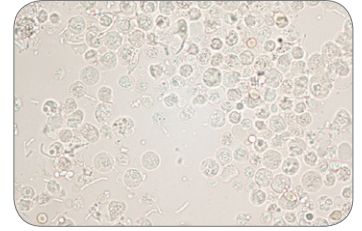


Figure 3 Numerous leukocytes and few rod-shaped bacteria

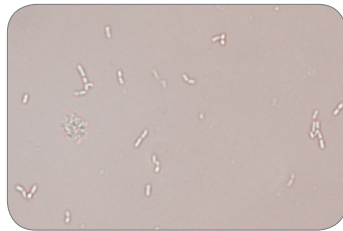


Figure 4 Many rod-shaped bacteria, 100x objective field of view

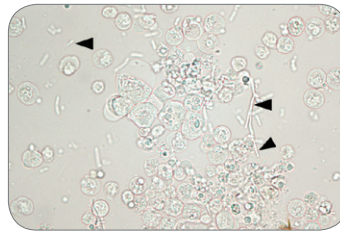


Figure 5 Many leukocytes and large rod-shaped bacteria (black arrowheads)

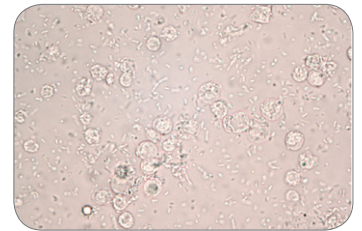


Figure 6 Numerous bacteria and leukocytes

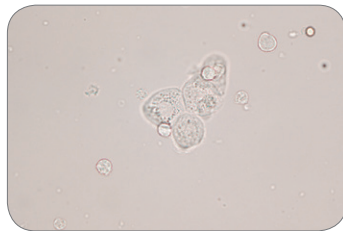


Figure 7 Transitional epithelial cells

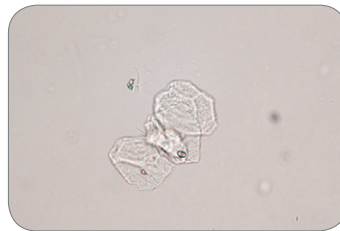


Figure 8 Squamous epithelial cells

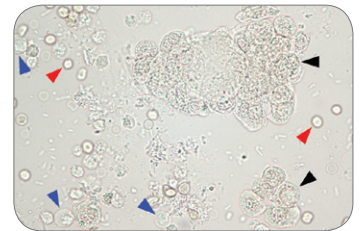


Figure 9 Epithelial cells (black arrows), RBC (red arrows) and WBC (blue arrows)

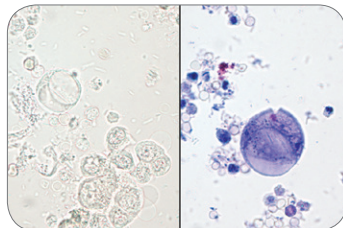


Figure 10 Transitional cell carcinoma (NMB wet prep on right)

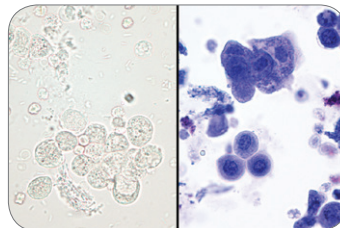


Figure 11 Transitional cell carcinoma (NMB wet prep on right)

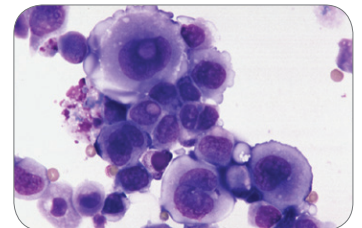


Figure 12 Transitional cell carcinoma, air-dried and Diff-Quik stained

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Casts

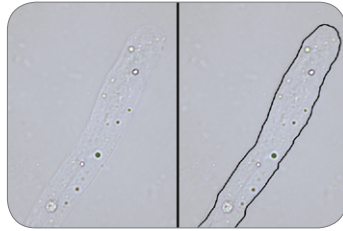


Figure 13 Hyaline cast
(borders outlined)

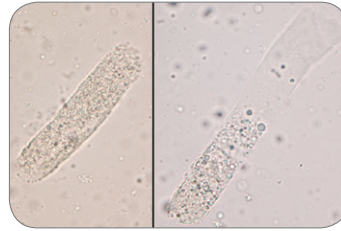


Figure 14 Left: Granular cast
Right: Mixed waxy
and granular cast

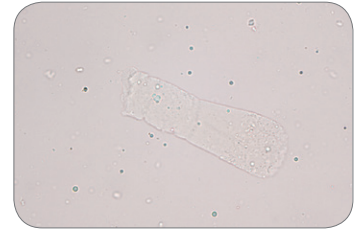


Figure 15 Waxy cast

Crystals and Miscellaneous

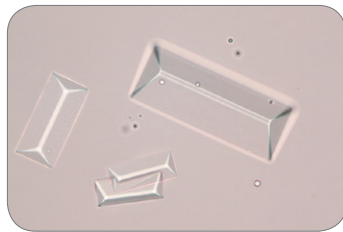


Figure 16 Struvite

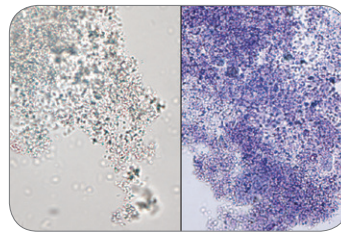


Figure 17 Amorphous
(NMB wet prep
on right)

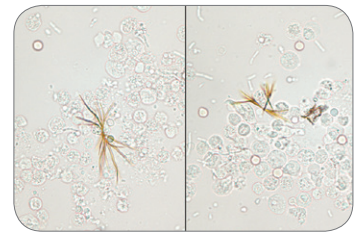


Figure 18 Bilirubin

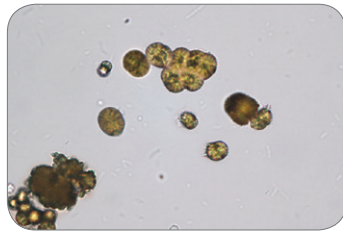


Figure 19 Ammonium urate

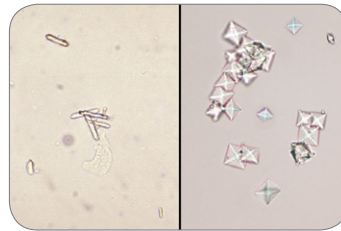


Figure 20 Left: Calcium oxalate
monohydrate
Right: Calcium oxalate
dihydrate

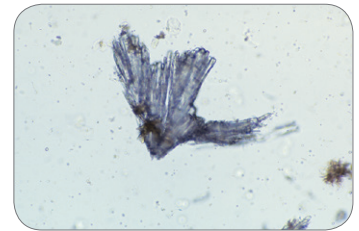


Figure 21 Drug (Tribrissen™)
crystals, 10x objective
field of view

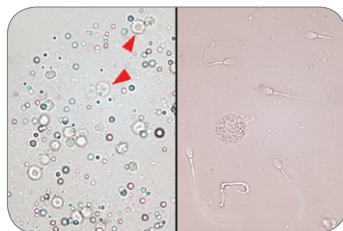


Figure 22 Left: Fat droplets
(red arrows, RBC)
Right: Sperm



Figure 23 Pearsonema plica



Figure 24 Contaminant
fragmented fiber

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