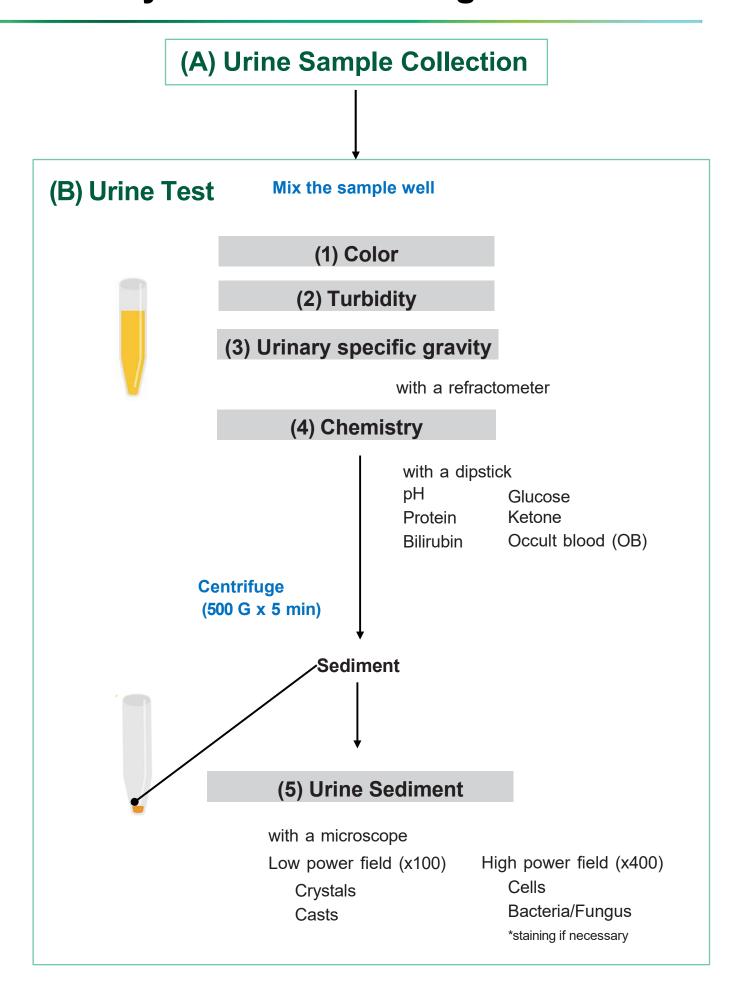


Urinary Test in cats & dogs

For Veterinary Professionals



Urinary Test in cats & dogs

(A) Urine Sample collection

Collection methods

1. Natural urination: Enough for cases without symptoms, easily contaminated.

2. Squeeze urination: Contraindicated for urethral obstruction, easily contaminated.

3. Catheter urination: Relatively sterile.

4. Cystocentesis: Most sterile, risk of bladder damage.

Samples to use in Urinary test

Fresh samples (within 30 min.) should be used.

* Crystals increase in the refrigerator.

* Bacteria increase in room temperature.

(B) Urine Test

(1) Color

Test Purpose: To check presence of blood, Hb, and/or Mb.

Diagnosis	Findings	Causes
Normal	Light yellow	_
Abnormal	Red or dark brown	Blood, Hemoglobin and/or Myoglobin

(2) Turbidity

Test Purpose: To check presence of casts, crystals, cells, and/or bacteria.

Diagnosis	Findings	Causes
Normal	Clear	_
Abnormal	Cloudy	Casts, Crystals, Cells and/or Bacteria

(3) Urinary specific gravity (USG)

Test Purpose: To evaluate the tubular capacity.

Method: With a refractometer

Diagnosis	Findings	Causes
Normal	≧ 1.030 (dogs) / ≧ 1.035 (cats)	_
Abnormal	≥ 1.050 (dogs) / ≥ 1.060 (cats) (Concentrated urine)	Dehydration etc.
	1.008 - 1.012 (Isotonic urine)	Chronic kidney disease etc.
	≦1.007 (Diluted urine)	Hyperhydration, Diabetes insipidus etc.

Urinary Test in cats & dogs

(B) Urine Test

(4) Chemistry

Test Purpose: To determine underlying diseases.

Method: With a dipstick

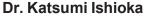
Items	Diagnosis	Findings	Causes
рН	Normal	6 - 7	_
	Abnormal	> 7	Alkaline urine (Struvite formation)
		< 6	Acidic urine (Calcium oxalate (CaOx) formation)
Protein	Normal	(-) - (1+)	_
	Abnormal	≥ (2+)	Protein losing nephropathy (PLN) etc.
Glucose	Normal	(-)	_
	Abnormal	≥ (1+)	Diabetes mellitus
Ketone	Normal	(-)	_
	Abnormal	≥ (1+)	Diabetic ketoacidosis (DKA)
Bilirubin	Normal	Dogs: (-) (-) - (2+) when USG > 1.035 Cats: (-)	_
	Abnormal	Dogs: ≥ (+) ≥ (3+) when USG > 1.035 Cats: ≥ (+)	Icterus (Hemolytic or Hepatobiliary diseases)
Occult blood (OB)	Normal	(-)	_
	Abnormal	≥ (+)	Hemorrhage, Hemolysis, etc.

(5) Urine Sediment

Test Purpose: To identify the types of crystals, casts, cells and/or pathogens.

Method: With a microscope

Diagnosis	Findings	Causes
Normal	Negative	_
Abnormal	Crystals	Urolithiasis
	Casts	Kidney disease
	Cells	Hemorrhage, Inlammation, Tumors
	Bacteria	Urinary tract infection (UTI)



Nippon Veterinary and Life Science University



