Veti Stx-9 (Blood, Urobilinogen, Protein, pH, Bilirubin, Glucose, Creatinine, Leukocytes, Ketones Urine Test)

INTENDED USE: KACEY™ Vet-Stix for Urinanalysis are plastic strips to which are affixed several separate reagent pads. KACEY™ Vet-Stix provide tests for the semi-quantitative determination of glucose, Bilirubin, Ketone, blood, pH, protein, nitrite, and urobilinogen. Test results may provide information regarding the status of carbohydrate metabolism, kidney and liver function, acid-base balance, and bacteriuria, 1, 2.

SUMMARY AND EXPLANATION: The KACEY™ Vet-Stix 9 are ready to use upon removal from the bottle. The entire reagent strip is disposable. They provide a visual result. No additional laboratory equipment is necessary for testing unless the Vet-Stix 9 is used on a specific reader for the Vet-Stix 9. The reagent strips must be kept in the bottle with the cap tightly closed (as specified on the bottle) to maintain reagent reactivity.

TEST PRINCIPLES: Blood: This test is based on the Peroxidase-like activity of hemoglobin which catalyzes the reaction of Cumene-hydroperoxide and 3, 3', 5, 5'-Tetramethylbenzidine. The resulting color ranges from orange through green to dark blue.

Urobilinogen: This test is based on a modified Ehrlich reaction in which d-riboflavin is oxidized by adenosine triphosphatase and the resulting color ranges from orange through yellow to green.

Creatinine: The renal threshold in dog is approximately 180 mg/dL (11 mmol/L). Therefore, a positive result should be considered significant.

Protein: The detection of protein is based on the so-called “Protein error of pH indicators.” The protein pad is more sensitive to albumin than to other proteins such as globulins, mucoproteins etc. A negative reaction does not rule out the presence of these proteins.

pH: This test is based on a double indicator principle that gives a broad range of colors covering the entire urinary pH range. Colors range from orange through yellow to green to blue.

Glucose: This test is specific for glucose but levels of Ascorbic Acid above 50 mg/dL (3 mmol/L) may influence the sensitivity of the test.

Proteins Losing Glomerular Nephropathy

VETERINARY USE ONLY.

TO ORDER CALL: 828.685.3569 Fax 828.685.7126

Veti Stx-9™
Part #40404 (10 strips per bottle)  Part #40405 (25 strips per bottle)  Part #40406 (50 strips per bottle)

BIBLIOGRAPHY:

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SPECIMEN COLLECTION AND PREPARATION COLLECTION FOR ANALYSIS
There are several different methods of collection for urinalysis and each has its own benefits and also draw backs. Collection methods will often be indicated by the information the laboratory is seeking to obtain.

Midstream:
This collection method is often for the animal but can be quite difficult for the collector. Collection is accomplished by a direct method from the animal (recommend Kacey urine collection supplies –collection cups w/ extension collection cup holder).

Manual Expression:
This collection method is most often performed on small animals (dogs &cats). It is sometimes difficult, and can result in some sort of trauma in the form of red blood cells (RBC’s) in the urine. This method might result in contamination from the lower urinary tract.

Catheterization:
This test can be used on male dogs for the assessment of urethral patency and upper urinary tract infection. This method often times results in intrageneric presence of red blood cells (RBC) in the urine.

Cystocentesis Sample
This requires penetration of the bladder through the body wall and can be accompanied by minimal bleeding. This is the preferred way to use the upper tract for infection.

Urine specimens can be collected from animals by a variety of ways as described in the above sections. It is recommended that cleansing be performed at the collection site to insure a uncontaminated sample. The preferred method of choice would be by Cystocentesis because it provides a specimen with minimal amount of contamination. All urine specimens should be tested usually within one (1) hour of collection. The urine specimen should be protected from direct light and refrigerated (not frozen) if unable to test within one hour. If refrigerated the specimen should be brought up to room temperature before testing. Stored specimens should be tested within twelve hours (12) since bacteria growth could occur and may cause inaccurate results and also by interfering with other tests on the pet-STX.

Test Procedure
The following procedure must be followed exactly to achieve reliable results.

1. (a.) Completely immerse reagent areas of the strip in fresh, well-mixed urine.

2. (b.) While removing, touch the side of the strip against the rim of the urine container to remove excess urine and avoid running over (contamination from adjacent reagent pads.)

3. (c.) Blot the lengthwise edge of the strip on an absorbent paper towel to further remove excess urine and avoid running over (contamination from adjacent reagent pads.)

4. (d.) Compare each reagent area to its corresponding color blocks on the color chart and read at the times specified. Proper read time is critical for optimal results.

QUALITY CONTROL:
For best results, performance of reagent strips should be confirmed by testing known negative and positive specimens or control whenever a new test is performed or whenever a new bottle is first opened. Each laboratory should establish its own goals for acceptable standards of performance, and should question handling and testing procedures if these standards are not met. RESULTS: Results are obtained by direct comparison of the color blocks printed on the bottle label. The color blocks values represent nominal values; actual values will vary around the nominal values.

LIMITATIONS OF PROCEDURE:
1. The strips can be read visually or by the Kacey STEALTH instrument to enhance the accuracy over visual interpretation. Call for Details.
2. The STEALTH Instrument is available at “NO CHARGE” on the “Consignment Program”.
3. Comparison to the color chart is dependent on the interpretation of the individual. It is recommended laboratory personnel reading the results of these strips be tested for color blindness.
4. The presence of hemoglobin (25 mg/dL or visibly bloody urine).
5. Bilirubin (>15 mg/dL or visibly dark brown color urine) may cause erroneous results with the albumin and Creatinine tests. Vitamin C over 100 mg/dL does not affect the results of Micro-albumin and Creatinine.
6. Substances that cause abnormal urine color, such as drugs containing azo dyes (e.g., Pyridium, AZO Gantrisin, AZOGantanol), Nitrofurantoin (Macrobidantin, Furadantin) and riboflavin may affect the readability of the reagent areas on urine reagent strips. 5. Urinary albumin excretions can be elevated by exercise, urinary tract infections, and acute illness with fever. It is recommended that individuals avoid strenuous exercise prior to testing for Glucose: Large amounts of Ketone bodies (50 mg/dL or greater) may decrease color development. However, it is unlikely that the presence of Ketones simultaneously with glucose in the urine is sufficient to produce false negative results. At glucose levels of 1 g/dL or greater, the color may appear somewhat motiled. The darkest color should be used in interpreting results with the color chart. Reactivity may also vary with temperature.

Bilirubin: Reactions may occur with urine specimens containing large doses of chlorspromazine or rafampen which might be mistaken for positive bilirubin. Indican (indoxyl sulfate) and metabolites of Lomide can cause false positive or atypical color; ascobic acid (25 mg/dL or greater) may cause false negative results.

Creatinine: Urinary Creatinine concentration depends upon many factors such as muscle mass, gender, age, collection intervals, methodology. Very high specific gravity (>1.040) may cause low Creatinine values. Highly buffered alkaline urines may cause low readings relative to other methods. Elevated specific gravity readings may be obtained in the presence of moderate quantities (100-750 mg/dL) of protein. Acids urines (pH 5 or below) may cause elevated results.

Blood: The sensitivity of the blood test is reduced in urine with high specific gravity and/or high ascorbic acid content. Microbial Peroxidase, associated with urinary tract infection, may cause a false positive reaction.

pH: If proper procedure is not followed and excess urine remains on the strip, a phenomenon known as "runover" may occur, in which the acid buffer from the protein reagent will run onto the pH area, causing a false lowering in the pH result.

Urobilinogen: The test area will react with interfering substances known to react with Ehrlich’s reagent, such as Porphobilinogen and p-aminosalicylic acid. The test is not a reliable method for the detection of Porphobilinogen. Drugs containing azo-dyes (e.g., Azo Gantrisin) may give a masking golden color. The absence of Urobilinogen cannot be determined with the product.

Protein: No false positive or negative results are obtained in alkaline urines. However false positive results may be found when poolies of discontents containing queratonic ammonium groups are present in urine collection containers.

EXPECTED VALUES:

1. Blood: Any green spots or green color developing on the reagent area within 40 seconds is significant and the urine should be examined further. Blood is frequently, but not invariably, found in the urine of menstruating females.

2. Urobilinogen: In a healthy population, the normal urine Urobilinogen range obtained with this test is 0.2 to 1.0 Ehrlich unit per dL. A result of 2.0 EU/dL may be of clinical significance and the same animal sample should be evaluated further

3. Protein: In 24 hour urine samples, 1-14 mg of protein in 1 dL of urine may be excreted by the kidney. A color matching any block greater than Trace indicates significant Proteinuria.

4. pH: If proper procedure is not followed and excess urine remains on the strip, a phenomenon known as "runover" may occur, in which the acid buffer from the protein reagent will run onto the pH area, causing a false lowering in the pH result.

5. Bilirubin: Normally no Bilirubin is detectable in urine by even the most sensitive methods. Even trace amounts of Bilirubin are sufficiently abnormal to require further investigation. Atypical colors (colors produced which are different than the negative or positive color blocks shown on the Color Chart) may indicate that Bilirubin derived bile pigments are present in the urine sample and are possibly masking the Bilirubin reaction.

6. Glucose: Small amount of glucose are normally excreted by the kidney. Concentrations of as little as 0.1 g/dL glucose, read either at 10 or 30 seconds, may be significantly abnormal if found consistently. At 10 seconds, results should be interpreted qualitatively; i.e., negative or positive. These quantitative results, read at 90 seconds only.

7. Creatinine is normally present in random urine in concentrations of 10 to 300 mg/dL (0.9 to 26.5 mmol/L). Creatinine

8. Ketone: Normally no Ketones are present in urine. Detectable levels of Ketone may occur in urine during physiological stress conditions, pregnancy, and frequent strenuous exercise. In controlled diets, or in other abnormal carbohydrate metabolism situation, Ketones appear in the urine in excessively large amounts before serum Ketones are elevated.

9. Leukocytes: Normally no leukocytes are detectable in the urine. Individually observed trace results may be of questionable clinical significance. Positive results may be found in random samples from females due to contamination by vaginal fluid.

Pg 2

Pg 3