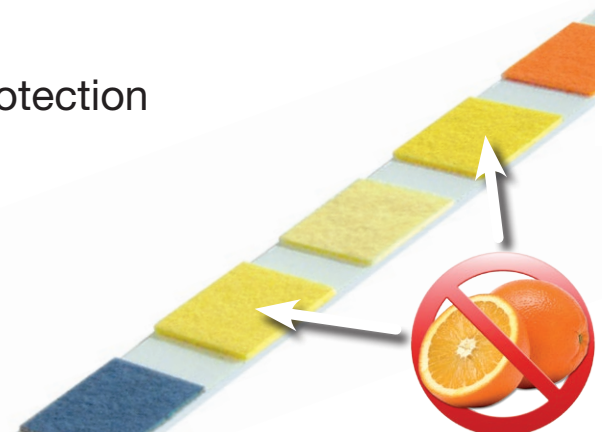


## Urinalysis for veterinary care



- Urine test strips with ascorbic acid protection
- Performs highest quality standards
- Excellent price-performance ratio
- Includes special information for veterinarians



combi <sup>®</sup> screen PLUS			Glucose	Ascorbic Acid	Ketones	Protein	pH-Value	Blood	Nitrite	Leucocytes	Spec. Gravity	Bilirubin	Urobilinogen
Name	Art.-Nr.	Cont.											
VET 11 PLUS	94 100V	100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Ascorbic acid, better known as Vitamin C, is being ingested mainly through forage and nutritional supplements.

### General Information:

The use of test strips for examination of urine of animals can provide information which supports the diagnosis of disorders or diseases. Besides test strips evaluation, a macroscopic

evaluation of the urine should be performed (color, turbidity, odor, volume). The reference ranges for different animals are different, details can be taken from the reference table.



Most of it is excreted unaltered in the urine again. For this reason a high percentage of the animals shows a clearly increased Ascorbic acid level in the urine. This results in lowered or even false negative results of the blood and glucose pads with many urine test strips on the market. Therefore diagnostic or therapeutic actions may be taken too late.

Analyticon's CombiScreen PLUS test strip offers a considerable higher reliability due to its integrated ascorbic acid protection system.

Parameter	Horse	Cattle	Pig	Sheep	Goat	Dog	Cat	Bunny	Guinea pig
Bilirubin	neg.	neg.	neg.	neg.	neg.	neg. – weak pos.	neg.	neg.	neg.
Urobilinogen	neg. – weak pos.	neg. – weak pos.	neg. – weak pos.	neg. – weak pos.	neg. – weak pos.	neg. – weak pos.	neg. – weak pos.	neg. – weak pos.	neg. – weak pos.
Ketones	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.
Ascorbic Acid	1)	1)	1)	1)	1)	1)	1)	1)	1)
Glucose	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.
Protein	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.
Blood	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.
pH	7.6 – 9.0	7.0 – 8.4	5.5 – 8.0	7.5 – 8.5	7.5 – 8.5	5.5 – 7.0	5.0 – 7.0	8.2	8.0 – 9.0
Nitrite	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.
Leucocytes	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.
Specific Gravity	1.020 – 1.040	1.020 – 1.040	1.020 – 1.040	1.020 – 1.040	1.020 – 1.040	1.001 – 1.065	1.001 – 1.080	1.003 – 1.036	1.000 – 1.040
Color	Clay – ochre	Bright yellow – brown yellow	Bright yellow – dark yellow	Bright yellow – brown yellow	Bright yellow – brown yellow	Paly yellow – brown yellow	Yellow – dark yellow	Bright yellow – auburn	Yellow
Turbidity	Turbid	Clear	Clear	Clear	Clear	Clear	Clear	Clear – turbid	Clear – slightly turbid
24h-Volume (ml/kg)	8 – 30	16 – 50	20 – 80	10 – 40	10 – 40	24 – 50	18 – 25	20 – 350	–
Odor	Aromatic	Aromatic	Aromatic, unpleasant	Aromatic – neutral	Aromatic – neutral	Garlic, meat broth	Caustic	–	–

### Special Information on veterinary urine diagnostics

Besides the information on CombiScreen VET 11 test strips, there is some additional information especially related to veterinary diagnostics. The nutrition, habits of liquid intake, physical activity of the animal and conditions of collection of the sample must be considered during urinalysis of animals.

**Bilirubin:** The test normally is negative for all animals. Dogs may have bilirubin in their urine without being ill.

**Urobilinogen:** The test normally is negative or slightly positive for animals.

**Ketones:** The test normally is negative for all animals. Ruminants sometimes may show a weak positive test result.

**1) Ascorbic Acid:** Most of the animals are in the position to produce Ascorbic Acid with its body in limited quantities independently (Exceptions: Guinea pig, Primates and some species of birds). By the influence of heat, coldness, disease, stress and deficits in feeding it could come to an acute shortage of vitamin C for the animal. Vitamin C is indispensable for the creation of connective tissue, bones and cartilage as well as for normal function of tissue and several metabolism reactions. In connection with vitamin B and vitamin E it is stimulating the defense reaction of the body after the influence of stress and infections. Most of the animal feeds are containing only a few or no vitamin C. The vitamin could be added with supplemental animal feed, fresh fruits and vegetables.

**Glucose:** The test normally is negative for all animals.

**Protein:** The test normally is negative for all animals. Urine of cats or dogs may show little protein concentrations. Due to the very high pH of herbivores, false positive in Protein caused by increased pH may be observed.

**Blood:** The test normally is negative for all animals.

**pH:** The pH is strongly influenced by the nutrition. In general, the pH for herbivores is lying higher than the pH of carnivores.

**Nitrite:** The test normally is negative for all animals. Especially for carnivores, the test may show a limited sensitivity, because the necessary nitrate concentration is not present in their urine in case of a non-herbal diet.

**Leucocytes:** The test normally is negative for all animals.

**Specific Gravity:** The specific gravity greatly varies in a broad range, depending on the species and on the water intake of the individual animal.

**Color:** The color differs strongly depending on the animal and the concentration of the urine. Normally it has a yellow appearance. Strongly concentrated urine has got a more intense color than low concentrated urine. Abnormal colorations may occur in case of special medical treatment or nutrition, or at high concentrations of red blood cells.

**Turbidity:** Fresh urine normally is transparent for most animals, excepting for horses. Urine of horses shows a viscous and cloudy appearance. Turbidity may indicate blood, bacteria, epithelia, cells or crystals. Refrigeration may cause the sedimentation of crystals or other components, which produces a cloudy appearance after thawing. This normally has no significance.

**Volume:** The volume of urine samples strongly depends on the animal which is examined. Evaluations based on a 24-hour collection of urine are more significant than evaluations based on a single sample.

**Odor:** Odor should only be checked if fresh urine is available. Urine normally has got a specific odor, depending on the species which is examined. Penetrative odor indicates ammonia, caused e.g. by bacteria, sweet odor indicates diabetes mellitus, smell from acetone indicates ketonuria. Odor can also be influenced by medication and nutrition.

### Literature:

Kraft / Dürr, klinische Labordiagnostik in der Tiermedizin, 6. Auflage, Verlag Schattauer 2005.

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