

## TABLE OF CONTENTS

|                     |   |
|---------------------|---|
| INFECTIONS.....     | 2 |
| HORMONES            |   |
| Thyroid line.....   | 5 |
| Other hormones..... | 7 |

ELISA Kit format: 96-well microplate, breakable strips, all reagents are liquid and ready-to-use, dispensed in vials with screw caps, chromogen – single component TMB, shelf life – 12 months.

XEMA products are manufactured in Russia, Ukraine, Finland and China  
Please send your orders and inquiries to  
Tel./Fax: +358 5 457 01 11  
<http://xema-medica.com/eng/veterinary/>

# INFECTIONS

**REF K101CF *Toxoplasma* IgG-CF EIA**

**A solid-phase enzyme immunoassay for the qualitative determination of IgG antibodies to *Toxoplasma gondii* in canine or feline serum or plasma**

Toxoplasmosis is a widespread infection caused by the intracellular protozoan parasite *Toxoplasma gondii*. Pets (cats and dogs) may serve as intermediate host for *T. gondii* and transmit infection to humans. In most of cases, toxoplasmosis is a mild or asymptomatic disease; however, in immunocompromised patients this disease may be very severe and even life-threatening. Another risk group is pregnant women in whom primary toxoplasmosis can be transfected to the fetus, causing abortion, and severe malformations. Testing of cats and dogs for toxoplasmosis is used to detect carrier state and thus to reveal the risk for humans.

|                            |               |                    |                    |                         |           |
|----------------------------|---------------|--------------------|--------------------|-------------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b> | 30'/30'/15'; 37 °C | <b>Control samples:</b> | 2         |
| <b>Sample volume:</b>      | 100 µl        | <b>Calibrator:</b> | 1                  | <b>Shelf life:</b>      | 12 months |
| <b>Sample predilution:</b> | 1:21          |                    |                    |                         |           |

**REF K104CF *HSV 1/2* IgG-CF EIA**

**A solid-phase enzyme immunoassay for the qualitative determination of IgG antibodies to HSV 1/2 in canine or feline serum or plasma**

*Herpes simplex virus* (HSV) is one of the most common pathogens in mammals. HSV is transmitted by all secretions of infected body, especially via saliva, semen and cervical fluid. Latency and re-activation are characteristic for HSV infection. Specific IgG-antibodies to HSV are protective to some extent – they help to prevent the disease and limit latency, although do not provide a complete protection. A high titer of anti-HSV IgG-antibodies may suggest either a recent acute infection or reactivation of a latent one.

Specific anti-viral treatment as well as non-specific activation of the immune system inhibit production of viral antigens and, therefore, induce decline of anti-HSV-IgG antibodies to their normal values.

|                            |               |                    |                    |                         |           |
|----------------------------|---------------|--------------------|--------------------|-------------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b> | 30'/30'/15'; 37 °C | <b>Control samples:</b> | 2         |
| <b>Sample volume:</b>      | 100 µl        | <b>Calibrator:</b> | 1                  | <b>Shelf life:</b>      | 12 months |
| <b>Sample predilution:</b> | 1:21          |                    |                    |                         |           |

**REF K105CF *Chlamydia* IgG-CF EIA**

**A solid-phase enzyme immunoassay for the qualitative determination of IgG antibodies to *Chlamydia* in canine or feline serum or plasma**

Chlamydiosis is an infection disease affecting both animals and humans. Clinical manifestations may be the following: abortion, endometritis, vaginitis, mortality, nonviable offspring, encephalomyelitis, polyarthritis, conjunctivitis, pneumonia, enteritis, mastitis, orchitis, urethritis, balanoposthitis. A wide spread of infectious agents in natural surrounding (wild animals, especially – birds) represent a constant threat for humans.

According to a new classification, *Chlamydiaceae* family is divided into 2 genera: *Chlamydia* and *Clamydophila*. *Chlamydia* include the following species: *C. trachomatis* (affects humans and laboratory animals), *C. suis* (affects pigs), *C. muridarum* (affects mice, hamsters). *Chlamydophila* include the following species: *C. pneumoniae* (affects humans and horses), *C. pecorum* (affects large horn cattle, sheep, goats, pigs), *C. psittaci* (affects birds, dogs and large horn cattle), and *C. psittaci* subspecies: *C. abortus* (affects large horn cattle, sheep, goats, horses, pigs, dogs), *C. caviae* (affects guinea pigs), *C. felis* (affects cats). Both genera of *Chlamydiaceae* share common antigens.

Ca. 18–38 % of dogs are infected with *Chlamydia* with clinical manifestations seen only sporadically. In cats, ca. 65–70 % are *Chlamydia* carriers (mostly, asymptomatic) with living *Chlamydia* organisms found in saliva, urine, on pads. Various authors report ca. 5–10 % cats having chronic chlamydiosis

Chlamydiosis is accompanied by a low production of neutralizing antibodies – they are produced in low titers and not constantly. Elevated IgG antibody titer indicates a persisting infection or recent reactivation.

|                            |               |                    |                    |                         |           |
|----------------------------|---------------|--------------------|--------------------|-------------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b> | 30'/30'/15'; 37 °C | <b>Control samples:</b> | 2         |
| <b>Sample volume:</b>      | 100 µl        | <b>Calibrator:</b> | 1                  | <b>Shelf life:</b>      | 12 months |
| <b>Sample predilution:</b> | 1:21          |                    |                    |                         |           |

**REF K106CF *Mycoplasma* IgG-CF EIA****A solid-phase enzyme immunoassay for the qualitative determination of IgG antibodies to *Mycoplasma* in canine or feline serum or plasma**

*Mycoplasmae* represent a separate class of microorganisms. Unique metabolic properties of *Mycoplasmae* determine their poor growth on standard microbiological media and require the application of serological methods in diagnostics. All *Mycoplasmae* share common antigenic epitopes; the microbes cause pneumonia, bronchitis and bullous meningitis; acute or chronic pelvic inflammations and may contribute to male and female infertility. Specific IgG-antibodies to *Mycoplasmae* do not possess protective properties; however their serum titer reflects the degree of microbial growth. Therefore, the detection of serum IgG antibodies may be used for disease and treatment monitoring. Elevated serum IgG antibody titers are detected after 3–4 weeks from the onset of the disease in spite of successful antibiotic treatment.

|                            |               |                    |                    |                         |           |
|----------------------------|---------------|--------------------|--------------------|-------------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b> | 30'/30'/15', 37 °C | <b>Control samples:</b> | 2         |
| <b>Sample volume:</b>      | 100 µl        |                    |                    | <b>Shelf life:</b>      | 12 months |
| <b>Sample predilution:</b> | 1:21          |                    |                    |                         |           |

**REF K116C *Brucella* IgG-C EIA****New test!****A solid-phase enzyme immunoassay for the qualitative determination of IgG antibodies to *Brucella* in canine serum or plasma**

Brucellosis is a chronic infection which affects animals and humans and is caused by *Brucella* bacteria. In dogs, clinical signs include periodic fever and pathology of reproduction. Morphologically, all *Brucella* (*B. abortus*;; *B. melitensis*, *B. suis*, *B. neotomae*, *B. ovis*, *B. canis*, etc.) are very similar and represent small non-motile, non-encapsulated Gram-negative coccobacilli. Almost all *Brucella* species may induce disease in dogs and in humans.

|                       |               |                    |                    |                         |           |
|-----------------------|---------------|--------------------|--------------------|-------------------------|-----------|
| <b>Sample type:</b>   | serum, plasma | <b>Incubation:</b> | 30'/30'/15', 37 °C | <b>Control samples:</b> | 2         |
| <b>Sample volume:</b> | 20 µl         |                    |                    | <b>Shelf life:</b>      | 12 months |

**REF K122C *Candida* IgG-C EIA****A solid-phase enzyme immunoassay for the qualitative determination of IgG antibodies to *Candida* in canine serum or plasma**

Candidosis is a rare pathology affecting skin and mucous surfaces and caused by fungi of *Candida* species. Various *Candida* species are pathogenic, *C. albicans* and *C. tropicalis* being the most common. Alteration of normal microflora and/or immune status due to other pathology or drugs intake facilitates disease progression. The main symptoms are: erosive non-healing lesions covered by a greyish-white layer and surrounded by a red hem. Erosions are found on mucous surfaces of the mouth, throat, esophagus, on praeputium, in the anus and on skin-mucous borders. Various *Candida* species may also be the causative agents of erosive skin lesions, chronic and acute diarrhea, otitis externa, abscesses of interdigital folds, and inflammation of the nail bed. Substantial alteration of cellular immunity may lead to more serious pathologies, such as lesions of the intestine, gall bladder and ducti, bronchi and urinary tract as well as systemic candidosis (sepsis) with living *Candida* fungi found in circulation and *Candida* antigens detected in urine.

Specific IgG-antibodies to *Candida* antigens are not protective (they do not protect animals from recurrent or repeated infection), but their titer usually reflects activity of fungal growth and therefore may be used to monitor such infections. Despite effective antifungal therapy, elevated serum levels of IgG-antibodies may be found 3-4 weeks after the onset of the disease.

|                            |               |                    |                    |                         |           |
|----------------------------|---------------|--------------------|--------------------|-------------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b> | 30'/30'/15', 37 °C | <b>Control samples:</b> | 2         |
| <b>Sample volume:</b>      | 100 µl        | <b>Calibrator:</b> | 1                  | <b>Shelf life:</b>      | 12 months |
| <b>Sample predilution:</b> | 1:101         |                    |                    |                         |           |

**REF K151C Parvo-IgG-C EIA****A solid-phase enzyme immunoassay for the quantitative determination of Parvo-IgG in serum or plasma of *Canidae* and *Mustelidae***

Parvovirus genus includes several species, the *Canidae* Parvovirus (CPV) type 2 being defined as a causative agent of parvoviral enteritis affecting *Canidae* and *Mustelidae*. CPV induces a rapid and serious disease with high mortality, especially in non-immunized animals. The symptoms are not specific to CPV infection and include chronic diarrhoea, dehydration, aphasia, vomiting and panleucopenia. In newborn puppies myocardial damage is also often seen. The female dog antibodies give protection to puppies until 5–6 weeks of age. The latter get their own immunological protection after week 8 only.

Serum IgG antibodies to CPV appear on day 4–6 after infection with their maximal titre being reached on day 10–12. Anti-CPV IgG antibodies are protective. That is why vaccination is widely used to prevent infection.

Quantitative determination of IgG-antibodies to CPV is used to estimate effectiveness of vaccination and to diagnose the infection in non-immunized animals.

|                            |               |                     |                    |                    |           |
|----------------------------|---------------|---------------------|--------------------|--------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b>  | 30°/30°/15°; 37 °C | <b>Shelf life:</b> | 12 months |
| <b>Sample volume:</b>      | 100 µl        | <b>Calibrators:</b> | 6 (0–320 U/ml)     |                    |           |
| <b>Sample predilution:</b> | 1:101         |                     |                    |                    |           |

**REF K152C CDV-IgG-C EIA****A solid-phase enzyme immunoassay for the quantitative determination of IgG antibodies to CDV in serum or plasma of *Canidae* and *Mustelidae***

*Canidae/Mustelidae* distemper disease is caused by a virus of the *Paramyxoviridae* family. Very contagious, it affects mainly young animals by direct contamination through the respiratory tract. The disease course may be divided into two stages: fever stage and nervous stage. Fever stage is comparatively easy to cure and rarely leads to death. Nervous stage develops if the animal is not cured and is characterized by damage of the CNS caused by autoimmune reactions. This stage usually ends with animal's death.

Among dogs, most sensitive to the disease are huskies, poodles, German sheepdogs and some other breeds. A part of dogs (ca. 20 %) are genetically deficient for anti-CDV immune response, such animals being very reluctant to treatment and usually dying.

CDV-IgG plays a protective role – that is why prophylaxis of this infection is based on vaccination. This test may be used both to estimate effectiveness of vaccination and to detect infection in non-immune animals.

|                            |               |                     |                    |                    |           |
|----------------------------|---------------|---------------------|--------------------|--------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b>  | 30°/30°/15°; 37 °C | <b>Shelf life:</b> | 12 months |
| <b>Sample volume:</b>      | 100 µl        | <b>Calibrators:</b> | 6 (0–320 U/ml)     |                    |           |
| <b>Sample predilution:</b> | 1:101         |                     |                    |                    |           |

**REF K174CF *Nematoda* IgG-CF EIA****A solid-phase enzyme immunoassay for the qualitative determination of IgG antibodies to *Nematoda* in serum or plasma of *Carnivora***

In most cases, a causative agent of helminthic infection is some type of nematodes which parasitize mostly in small intestine. Prevalence of such infections in dogs comes to 20 %, in puppies –90 %, in cats – 10 %.

Nematodes include many species, cats and dogs being mostly affected by *Ascaris canis*, *Ascaris leonine* and *Toxocara canis*. Biology of canine and feline *Ascaris leonine* and *Ascaris canis* is roughly the same. Infection may be intrauterine, may occur during breast feeding or ingestion of helminth eggs (with food or with an intermediate host). Larvae become mature in 20–21 days. An average lifespan of helminthes is ca. 4–6 months. Nematode eggs mature in intestine, larvae mature in liver, then they come to lymphatic and blood vessels thus being spread to liver, heart, lungs, trachea, throat and after a second ingestion they develop to mature nematodes. This cycle takes ca. 3 months.

|                            |               |                    |                    |                         |           |
|----------------------------|---------------|--------------------|--------------------|-------------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b> | 30°/30°/15°; 37 °C | <b>Control samples:</b> | 2         |
| <b>Sample volume:</b>      | 100 µl        | <b>Calibrator:</b> | 1                  | <b>Shelf life:</b>      | 12 months |
| <b>Sample predilution:</b> | 1:101         |                    |                    |                         |           |

**REF K175CF Eucestoda IgG-CF EIA****A solid-phase enzyme immunoassay for the qualitative determination of IgG antibodies to Eucestoda in serum or plasma of Carnivora**

Cestodiasis is a disease induced by tapeworms (*Cestoidea*) and affecting dogs, cats and other *Carnivora*. The most well-known examples of cyclophyllid cestodes are *Taenia solium* and *Echinococcus*. Cestodes parasitize in small intestine of *Carnivora*, while their larval stage takes course mostly in parenchymatous organs of intermediate hosts. Mature cestodes parasitize mainly in intestine of *Canidae* (dogs, wolves, jackals) and more rare – in cats.

Biology of cestodes includes intermediate hosts (bovine cattle, small cattle, camels, pigs, horses, elks, etc.) and definite hosts (dogs, wolves, foxes). Intermediate hosts are infected by ingestion of helminth eggs with fodder or water, their parenchymatous organs being the sites of larvae maturation. Definite hosts are infected during eating of parenchymatous organs of infected intermediate hosts. Development into mature cestodes occurs in the small intestine of definite hosts and takes 68–97 days. The lifespan of cestodes in the intestine of definite hosts is ca. 5–7 months. Human beings may also be infected with helminth larvae – in some cases, such an infection may be fatal.

|                            |               |                    |                    |                         |           |
|----------------------------|---------------|--------------------|--------------------|-------------------------|-----------|
| <b>Sample type:</b>        | serum, plasma | <b>Incubation:</b> | 30'/30'/15'; 37 °C | <b>Control samples:</b> | 2         |
| <b>Sample volume:</b>      | 100 µl        | <b>Calibrator:</b> | 1                  | <b>Shelf life:</b>      | 12 months |
| <b>Sample predilution:</b> | 1:101         |                    |                    |                         |           |

**HORMONES****THYROID LINE****REF K201C Canine TSH EIA****New test!****A solid-phase enzyme immunoassay for the quantitative determination of canine TSH in canine serum (plasma)**

TSH stimulates thyroid gland to secrete thyroid hormones. TSH secretion in hypophysis is controlled by a negative feedback regulation by thyroid hormones. TSH secretion is subject to circadian rhythms with highest levels seen early in the morning (6 a.m.). Changes of TSH blood level during a day are not significant; nevertheless, if the results do not correspond with clinical status and other laboratory data, it is recommended to take and test another blood sample.

Primary hypothyroidism is one of the most common endocrine diseases in the dog. Possible reasons why dogs with primary hypothyroidism have plasma TSH concentrations within the reference range include concurrent secondary or tertiary hypothyroidism, failure of the TSH assay to detect all isoforms of circulating TSH, and a decrease in elevated TSH values in hypothyroid dogs with time. In addition, fluctuations in the circulating concentrations of TSH could be a reason for this phenomenon.

|                       |               |                     |                 |                        |           |
|-----------------------|---------------|---------------------|-----------------|------------------------|-----------|
| <b>Sample type:</b>   | serum, plasma | <b>Incubation:</b>  | 120'/15'; 37 °C | <b>Control sample:</b> | no        |
| <b>Sample volume:</b> | 50 µl         | <b>Calibrators:</b> | 6 (0–8 ng/ml)   | <b>Shelf life:</b>     | 12 months |
| <b>Sensitivity:</b>   | 0.05 ng/ml    |                     |                 |                        |           |

**REF K211CF total T3-CF EIA****New test!****A solid-phase enzyme immunoassay for the quantitative determination of total T3 in canine or feline serum or plasma**

Thyroid hormones thyroxin ( $T_4$ ) and 3,5,3'-triiodothyronine ( $T_3$ ) exert regulatory influences on growth, differentiation, cellular metabolism and development of skeletal and organ systems.  $T_4$  and  $T_3$  in blood are found both in free and bound form – mostly, they are bound to thyroxin binding globulin (TBG). Only free forms of  $T_3$  and  $T_4$  exert hormonal activity. The main indications to determine total  $T_3$  are: hyperthyroidism or thyrotoxicosis suspected, solitary nodes found during USI of thyroid gland.

Total  $T_3$  is elevated in hyperthyroidism (diffuse toxic goiter, toxic multinodular goiter), in secondary hyperthyroidism caused by elevated TSH synthesis in pituitary tumors, in cases of overdosage of thyroid medications (artificial hyperthyroidism).

Decreased total  $T_3$  is seen in hypothyroidism.

|                       |                 |                     |                 |                        |           |
|-----------------------|-----------------|---------------------|-----------------|------------------------|-----------|
| <b>Sample type:</b>   | Serum or plasma | <b>Incubation:</b>  | 30'/15'; 37 °C  | <b>Control sample:</b> | 1         |
| <b>Sample volume:</b> | 50 µl           | <b>Calibrators:</b> | 5 (0–15 nmol/l) | <b>Shelf life:</b>     | 12 months |
| <b>Sensitivity:</b>   | 0.4 nmol/l      |                     |                 |                        |           |

**REF K212CF total T4-CF EIA****New test!****A solid-phase enzyme immunoassay for the quantitative determination of total T4 in canine or feline serum or plasma**

Thyroid hormones thyroxine ( $T_4$ ) and 3,5,3'-triiodothyronine ( $T_3$ ) exert regulatory influences on growth, differentiation, cellular metabolism and development of skeletal and organ systems.  $T_4$  and  $T_3$  in blood are found both in free and bound form – mostly, they are bound to thyroxine binding globulin (TBG). Only free forms of  $T_3$  and  $T_4$  exert hormonal activity. The main indications to determine total  $T_4$  are: hyper- or hypothyroidism suspected, monitoring during thyreostatic therapy. Total  $T_4$  is elevated in hyperthyroidism (diffuse toxic goiter, toxic multinodular goiter), in secondary hyperthyroidism caused by elevated TSH synthesis in pituitary tumors. Elevation of thyroid hormones in diffuse toxic goiter is caused by autoantibodies which mimic TSH action, but, unlike TSH, there is no negative feedback in this case and thyroid hormones continue to be produced more and more. In Hashimoto thyroiditis,  $T_4$  level may be normal during early stages of the disease, while in advanced disease hypothyroidism with low  $T_4$  levels develops. It should be kept in mind that normal  $T_4$  level does not always indicate normal thyroid function –  $T_4$  concentration may be normal in endemic goiter and latent forms of hyper- and hypothyroidism.

|                       |                 |                     |                  |                        |           |
|-----------------------|-----------------|---------------------|------------------|------------------------|-----------|
| <b>Sample type:</b>   | Serum or plasma | <b>Incubation:</b>  | 60'/15'; 37 °C   | <b>Control sample:</b> | 1         |
| <b>Sample volume:</b> | 25 µl           | <b>Calibrators:</b> | 5 (0–320 nmol/l) | <b>Shelf life:</b>     | 12 months |
| <b>Sensitivity:</b>   | 6 nmol/l        |                     |                  |                        |           |

**REF K213CF free T3-CF EIA****New test!****A solid-phase enzyme immunoassay for the quantitative determination of free T3 in canine or feline serum or plasma**

$T_3$  is a thyroid hormone which stimulates metabolism and oxygen uptake by tissues.  $T_3$  in blood is found both in free and bound form, while only free  $T_3$  exert hormonal activity.  $T_3$  is more potent than  $T_4$ .  $T_3$  activates heat production and oxygen uptake by all tissues except for brain, spleen and testicles. Stimulates vitamin A synthesis in liver. Decreases cholesterol and triglycerides level in blood, accelerates protein metabolism. Activates calcium renal excretion and metabolism of osseous tissue. Improves heart function.

|                       |                 |                     |                 |                        |           |
|-----------------------|-----------------|---------------------|-----------------|------------------------|-----------|
| <b>Sample type:</b>   | Serum or plasma | <b>Incubation:</b>  | 60'/15'; 37 °C  | <b>Control sample:</b> | 1         |
| <b>Sample volume:</b> | 50 µl           | <b>Calibrators:</b> | 6 (0–40 pmol/l) | <b>Shelf life:</b>     | 12 months |
| <b>Sensitivity:</b>   | 1 pmol/l        |                     |                 |                        |           |

**REF K214CF free T4-CF EIA****A solid-phase enzyme immunoassay for the quantitative determination of free T4 in canine or feline serum or plasma**

Thyroid hormones thyroxine ( $T_4$ ) and 3,5,3'-triiodothyronine ( $T_3$ ) exert regulatory influences on growth, differentiation, cellular metabolism and development of skeletal and organ systems.  $T_4$  and  $T_3$  in blood are found both in free and bound form – mostly, they are bound to thyroxine binding globulin (TBG). Only free forms of  $T_3$  and  $T_4$  exert hormonal activity also their percentage is very low.

The concentration of free  $T_4$  is generally accepted as an index of thyroid function which provide enough information to differentiate between hyper-, hypo- and euthyroidism.

Elevation of free  $T_4$  is found in hyperthyroidism, in animals with tumours of pituitary gland, in conditions with reduced TBG level, in animals under treatment with thyroid hormones.

Clinical signs of hyperthyroidism may be the following: polydipsia, polyuria, weight loss, increased appetite, weakness, fatigue, desire to be at cool places, tachycardia, amenorrhea. Laboratory investigation of urine and blood usually give normal values (in some cases, leucocytosis may be found).

Low free  $T_4$  is found in hypothyroidism, in animals with panhypopituitarism, in conditions with elevated TBG level (pregnancy, acute or chronic active hepatitis, estrogene-secreting tumors, hereditary increase), after physical stress, in animals with hemolysis, in animals under treatment with sulphanilamides or glucocorticoids.

Clinical signs of hypothyroidism may be the following: goiter, dwarfism, growth and development retardation, sometimes – symmetrical alopecia, somnolence, a tendency to obesity, thin and dull hair, follicular hyperkeratosis. The animal becomes more prone to infections.

Diagnostics of alterations of  $T_4$  secretion is based on TSH test – i.e., estimation of  $fT_4$  level before and after infusion of TSH.

|                       |                 |                     |                  |                        |           |
|-----------------------|-----------------|---------------------|------------------|------------------------|-----------|
| <b>Sample type:</b>   | Serum or plasma | <b>Incubation:</b>  | 60'/15'; 37 °C   | <b>Control sample:</b> | 1         |
| <b>Sample volume:</b> | 25 µl           | <b>Calibrators:</b> | 6 (0–100 pmol/l) | <b>Shelf life:</b>     | 12 months |
| <b>Sensitivity:</b>   | 1.5 pmol/l      |                     |                  |                        |           |

## OTHER HORMONES

### REF K207CF Progesterone-CF EIA

**A solid-phase enzyme immunoassay for the quantitative determination of Progesterone in canine or feline serum or plasma**

Progesterone is a gestagen with a MW of 314.5 Dalton. Progesterone is secreted by corpus luteum, adrenals and testis; it plays a role of a precursor for corticosteroids and androgens. Being an estrogen antagonist, Progesterone induces characteristic changes in endometrium necessary for implantation of an impregnated ovum.

|                       |               |                     |                  |                        |           |
|-----------------------|---------------|---------------------|------------------|------------------------|-----------|
| <b>Sample type:</b>   | serum, plasma | <b>Incubation:</b>  | 120'/15'; 37 °C  | <b>Control sample:</b> | 1         |
| <b>Sample volume:</b> | 50 µl         | <b>Calibrators:</b> | 6 (0–100 nmol/l) | <b>Shelf life:</b>     | 12 months |
| <b>Sensitivity:</b>   | 0,5 nmol/l    |                     |                  |                        |           |

### REF K207M Progesterone milk EIA (Cows pregnancy test)

**A solid-phase enzyme immunoassay for the quantitative determination of progesterone in cow's milk**

Progesterone is a gestagen with a MW of 314.5 Dalton. Progesterone is secreted by corpus luteum, adrenals and testis; it plays a role of a precursor for corticosteroids and androgens. Being an estrogen antagonist, Progesterone induces characteristic changes in endometrium necessary for implantation of an impregnated ovum.

During pregnancy, Progesterone concentration continuously increases at least by week 10–12, and it induces proliferation and development of mammary glands and inhibits ovulation.

A certain proportion of serum Progesterone penetrates into milk; this enables to detect pregnancy in cows using non-invasive sample collection method.

|                       |            |                     |                 |                        |           |
|-----------------------|------------|---------------------|-----------------|------------------------|-----------|
| <b>Sample type:</b>   | Cow's milk | <b>Incubation:</b>  | 120'/15'; RT    | <b>Control sample:</b> | 1         |
| <b>Sample volume:</b> | 20 µl      | <b>Calibrators:</b> | 6 (0–100 ng/ml) | <b>Shelf life:</b>     | 12 months |
| <b>Sensitivity:</b>   | 0.5 ng/ml  |                     |                 |                        |           |

### REF K210CF Cortisol-CF EIA

**A solid-phase enzyme immunoassay for the quantitative determination of Cortisol in canine or feline serum or plasma**

Glucocorticoids participate in regulation of carbohydrate, lipid and protein metabolism. Cortisol is the most important glucocorticoid, its main role being elevation of glucose level in blood. Cortisol action is based on its ability to activate gluconeogenesis in liver and to decrease glucose demand of peripheral tissues (mainly, lipid and lymphoid ones). Biological sense of this action is an elevation of blood glucose level in case of stress, low carbohydrate content in food, malnutrition, because glycogen resources may support glucose blood level for a short time only. Cortisol stimulates protein synthesis in liver. At the same time, it inhibits protein synthesis and accelerates protein degradation in muscular, lipid and lymphoid tissues, in skin fibroblasts thus inducing release of aminoacids which play a major role in gluconeogenesis. Besides, glucocorticoids decrease affinity of insulin receptors and inhibit synthesis of insulin. They also stimulate lipolysis, although in some tissues lipogenesis is activated. In general, glucocorticoid action includes not only regulation of various types of metabolism, but also a control of proliferative processes and immune system activity. E.g., glucocorticoids inhibit release of cytokines (interleukins 1 and 2 and  $\gamma$ -interferon) by lymphocytes and macrophages as well as arachidonic acids metabolism and release of inflammatory mediators by eosinophils.

|                       |               |                     |                   |                        |           |
|-----------------------|---------------|---------------------|-------------------|------------------------|-----------|
| <b>Sample type:</b>   | serum, plasma | <b>Incubation:</b>  | 60'/15'; 37°C     | <b>Control sample:</b> | 1         |
| <b>Sample volume:</b> | 10 µl         | <b>Calibrators:</b> | 6 (0–2000 nmol/l) | <b>Shelf life:</b>     | 12 months |
| <b>Sensitivity:</b>   | 25 nmol/l     |                     |                   |                        |           |

