

From Pasture to Arena: Healvet Safeguards Equine Health

Healvet Equine Immunofluorescence Assays

Equine Progesterone (eProg)

Accurately monitors the key hormone for pregnancy status and reproductive cycle regulation in horses, enabling dynamic tracking of breeding management.

Equine Serum Amyloid A (eSAA)

As an acute-phase protein, changes in its levels reflect the degree of inflammatory response in horses, serving as a crucial indicator for the diagnosis and monitoring of inflammatory diseases.

Foal Immunoglobulin G (Foal IgG)

Assesses the immune status of foals and maternal antibody levels, crucial for immune management and disease prevention.

Equine Adrenocorticotrophic Hormone (eACTH)

Regulates adrenal cortex function in horses, with secretion related to stress response and certain endocrine diseases.

eProg

Equine Progesterone (eProg) is a steroid hormone secreted by the corpus luteum and placenta of mares. It plays a dominant role in maintaining pregnancy, transforming the endometrium during the secretory phase, and regulating the estrous cycle. Dynamic changes

in its concentration directly reflect the reproductive status of the mare (e.g., ovulation confirmation, pregnancy diagnosis, corpus luteum function assessment).



Clinical Applications

1. Pregnancy Monitoring

- **Pregnancy Confirmation:** Results above the reference value during pregnancy indicate normal conversion of the corpus luteum to the pregnancy corpus luteum.
- **Risk Warning:** Results \leq reference value may indicate insufficient corpus luteum function, risk of abortion, or ectopic pregnancy.

2. Breeding Management

- **Optimal Breeding Timing:** Combined with the estrous cycle, results \leq reference value suggest non-pregnancy or corpus luteum regression; high values indicate pregnancy maintenance.
- **Embryo Viability Assessment:** Continuous monitoring during mid to late pregnancy; a sudden drop in eProg requires investigation of placental dysfunction.

3. Pathological Diagnosis

- **Corpus Luteum Insufficiency:** Low eProg levels during non-pregnancy are associated with ovulation disorders and infertility.
- **Endocrine Disorders:** Abnormal elevation requires exclusion of ovarian tumors and other pathologies.

Contact us for further information

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Diagnostic Methods

Immunofluorescence Assay

Suitable for on-site rapid screening and immediate decision-making (e.g., post-breeding pregnancy confirmation, emergency abortion risk assessment).

Healvet eProg fluorescence immunochromatographic assay quantifies eProg through fluorescence signal intensity, offering **rapid and highly sensitive detection, suitable for on-site use in pastures and veterinary clinics**. Combined with eSAA and eIgG, it provides a comprehensive health assessment.

eProg Detection Range and Reference Values		
Detection Range: 1-20 ng/mL (3.18-63.6 nmol/L)		
Reference Values:		
Significance	ng/mL	nmol/L
Low (Insufficient Corpus Luteum Function)	≤2	≤6.36
High (Pregnancy Maintenance)	>2	>6.36
*1 ng/mL = 3.18 nmol/L Ensure a veterinarian interprets the final results. As with all diagnoses, clinical symptoms and other tests must be considered.		

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eSAA

Equine Serum Amyloid A (eSAA) is a core marker of the acute-phase response in equines, synthesized by the liver. Its concentration can rapidly increase to hundreds or thousands of times the baseline within 2-6 hours after infection, trauma, or inflammatory stimulation (half-life ~50 minutes), offering superior sensitivity compared to white blood cell count and fibrinogen detection.

Clinical Applications

1. Inflammation Screening

- **Bacterial Infections (Pneumonia/Laminitis):** eSAA >100 mg/L (values for reference, must be combined with clinical symptoms) suggest systemic infection.
- **Viral Infections (Influenza/Herpes):** eSAA >20 mg/L (values for reference, must be combined with clinical symptoms) commonly seen in localized inflammation.
- **Mixed Infections/Fungal Infections:** eSAA >150 mg/L (values for reference, must be combined with clinical symptoms) require additional tests, such as pathogen detection.
- **Severe Infections:** >500 mg/L (values for reference, must be combined with clinical symptoms) indicate severe infections like sepsis or severe pneumonia.

2. Postoperative/Trauma Monitoring

- **Postoperative Monitoring:** Persistent elevation of eSAA 3 days post-orthopedic surgery warrants vigilance for secondary infections.
- **Trauma Monitoring:** eSAA <50 mg/L (values for reference, must be combined with clinical symptoms) 24 hours post-trauma suggests no secondary inflammation.

3. Treatment Efficacy Assessment

- **Treatment Response:** A $\geq 50\%$ decrease in eSAA 72 hours after antibiotic treatment (values for reference, must be combined with clinical symptoms) indicates effective treatment; persistent elevation requires adjustment.

4. Non-Infectious Disease Diagnosis

eSAA may be abnormally elevated in organ transplant rejection, trauma, active rheumatoid arthritis, and tumor metastasis.

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Diagnostic Methods

Immunofluorescence Assay

Suitable for on-site rapid screening, quickly identifying subclinical infections. Healvet Equine Serum Amyloid A (eSAA) fluorescence immunochromatographic assay is simple to operate, providing results in 5 minutes, suitable for on-site use in pastures or clinics, meeting the need for rapid clinical diagnosis.

eProg Detection Range and Reference Values	
Detection Range: 8-1500 mg/L	
Reference Values:	
Significance	mg/mL
Normal	<20
Abnormal	>20
<p>Ensure a veterinarian interprets the final results. As with all diagnoses, clinical symptoms and other tests must be considered.</p>	

Healvet immunofluorescence diagnostic technology, with its precision, stability, and rapid detection, is indispensable in equine disease diagnosis. **Combined detection of eProg and eSAA** can be completed within **15 minutes**.

The combination is suitable for breeding period management (e.g., identifying pregnancy with concurrent infections), perinatal monitoring (postpartum infection warning), and fever diagnosis (differentiating bacterial/viral infections), improving diagnostic accuracy and guiding clinical treatment.

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Foal IgG

IgG is the most abundant antibody type in animals, responsible for

neutralizing pathogens and activating immune responses. In newborn foals, the lack of Foal IgG necessitates passive acquisition of antibodies through colostrum, a process known as passive immune transfer.

IgG is the most important immunoglobulin in colostrum, providing immediate immune protection to newborn foals

against infections like sepsis. Failure in passive transfer can lead to severe diseases or death due to low immunity. Causes include insufficient colostrum production, delayed nursing, or poor absorption.



Clinical Applications

1. Diagnosing Passive Transfer Failure (FPT)

- Foals not ingesting sufficient colostrum within 12-24 hours post-birth are at risk of FPT (approximately 10%-25%), requiring Foal IgG testing for confirmation.
- **FPT Risk Grading:** Foal IgG results < reference value indicate low immune levels, necessitating immediate intervention (e.g., plasma or IgG infusion); if results are borderline, clinical observation or repeat testing is recommended.

2. Monitoring Treatment Efficacy

Dynamic monitoring of Foal IgG in foals receiving immune support (e.g., plasma infusion) to assess treatment efficacy.

3. Health Assessment

Routine screening of high-risk foals (e.g., premature, insufficient maternal lactation) for immune status.

4. Intervention Measures

- Results < reference value: Supplementation via oral or intravenous colostrum, hyperimmune plasma, or biological IgG preparations.
- Borderline results: Clinical symptoms should guide whether supplementation is needed; some studies suggest prophylactic plasma use.

Contact us for further information

Diagnostic Methods

Immunofluorescence Assay

Healvet fluorescence immunochromatographic assay provides rapid detection of **Foal IgG** within **10 minutes**, requiring only **5 µL** of sample, accurately quantifying Foal IgG concentration in foal serum or plasma.

Suitable for on-site or laboratory diagnosis, assessing foals with different immune statuses.

Foal IgG Detection Range and Reference Values Detection Range: 100-3000 mg/dL Reference Values:	
Significance	Reference Value
Low Immune Level	<400 mg/dL
Borderline Immune Level	400-800 mg/dL
Normal Immune Level	>800 mg/dL

Ensure a veterinarian interprets the final results. As with all diagnoses, clinical symptoms and other tests must be considered.

Detection Notes (For reference only, must be combined with clinical symptoms)

- ① **Optimal testing time** is 12-24 hours post-birth (after colostrum absorption).
- ② **Hemolyzed or lipemic samples** (interfering factors) may affect result accuracy.

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Equine Insulin Rapid Quantitative Test



Precision Testing for Metabolic Health

The Equine Insulin Test Kit quantitatively measures insulin levels in horses, identify insulin dysregulation, assess Equine Metabolic Syndrome (EMS), evaluate laminitis risk.

It is also recommended for Pituitary Pars Intermedia Dysfunction (PPID) suspected horses to gauge laminitis risk.

WHEN TO TEST:

- Obesity, especially “cresty neck” or regional fat deposits
- Recurrent or unexplained laminitis
- Suspected EMS or PPID
- Routine screening for high-risk horses
- Monitoring response to insulin therapy



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eACTH

Equine Adrenocorticotrophic Hormone (eACTH) is a polypeptide hormone secreted by the anterior pituitary in horses, primarily stimulating the adrenal cortex to secrete cortisol (glucocorticoid), involved in stress response, metabolic regulation, and immune modulation. Its secretion is regulated by hypothalamic corticotropin-releasing hormone (CRH) and influenced by negative feedback mechanisms (e.g., cortisol levels) and physiological rhythms (diurnal and seasonal variations).

Clinical Applications

1. Pituitary Dysfunction Diagnosis

- Cushing's Disease (PPID, Pituitary Pars Intermedia Dysfunction): Elevated eACTH levels are key indicators for diagnosing equine Cushing's disease, common in older horses, presenting with hirsutism, muscle atrophy, recurrent infections, and metabolic abnormalities.
- Adrenal Cortex Insufficiency: Primary (e.g., Addison's Disease) elevated ACTH with low cortisol; secondary (pituitary hypofunction) low ACTH and cortisol.

2. Seasonal Adjustment

- Equine ACTH secretion exhibits seasonal fluctuations, physiologically elevated in autumn (September-November in the Northern Hemisphere, March-May in the Southern Hemisphere), possibly related to light changes or reproductive cycles.
- Diagnostic thresholds should be adjusted seasonally, e.g., higher reference values in autumn to avoid misdiagnosis.

3. Dynamic Function Test Assistance

Combined with dexamethasone suppression test or TRH stimulation test to enhance Cushing's disease diagnostic specificity.

4. Congenital Adrenal Hyperplasia

Compensatory ACTH elevation to offset cortisol synthesis impairment.

5. Ectopic ACTH Syndrome

ACTH abnormally secreted by non-pituitary tumors (e.g., lung cancer), leading to cortisol excess.

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Diagnostic Methods

Immunofluorescence Assay

Immunofluorescence detection uses fluorescence immunochromatography, based on antigen-antibody specific binding, quantifying eACTH concentration through fluorescence signals.

Healvet fluorescence immunochromatographic assay offers rapid detection (**15 minutes**), **high sensitivity**, and **simple operation**, suitable for **on-site or clinic use**.

eACTH Detection Range and Reference Values		
Detection Range: 1.0-2000 pg/mL (0.220-440 pmol/L)		
Reference Values:		
Spring, Summer, Winter Reference Values		
Significance	pg/mL	pmol/L
Normal	<25	<5.5
Abnormal	≥25	≥5.5
Autumn Reference Values		
Normal	<75	<16.7
Abnormal	≥75	≥16.7
<p>Southern Hemisphere Autumn: March, April, May; Northern Hemisphere Autumn: September, October, November .</p> <p>eACTH concentration follows annual rhythms and varies with physiological factors.</p> <p>Ensure a veterinarian interprets the final results. As with all diagnoses, clinical symptoms and other tests must be considered.</p>		

Detection Notes (For reference only, must be combined with clinical symptoms)

① **Strictly follow sampling time** (autumn months in Northern/Southern Hemisphere) for reference range selection. Elevated autumn thresholds are physiological, not pathological.

Contact us for further information

② Interfering Factors

- Stress: Vigorous exercise, pain, or transport may transiently elevate eACTH; recommend sampling after rest.
- Medications: Glucocorticoid treatment may suppress eACTH secretion; discontinue before testing.

③ **Single eACTH testing may not suffice for diagnosis;** combine with clinical symptoms (e.g., hirsutism, laminitis), cortisol levels, and functional tests.

Summary

Foal IgG and eACTH immunofluorescence assays are powerful tools in equine disease diagnosis.

Healvet Foal IgG immunofluorescence assay assesses equine immune function, aiding in diagnosing immune-related diseases;

Healvet eACTH immunofluorescence assay assists in diagnosing hypothalamic-pituitary-adrenal axis-related diseases and monitoring treatment efficacy.

Healvet immunofluorescence assays offer high sensitivity, specificity, and rapid detection, providing veterinarians with reliable data to safeguard equine health. Attention to sample requirements and technical conditions is essential, with results interpreted in conjunction with clinical symptoms.

Healvet: More valuable medical products at your fingertips



Healvet HV-FIA 3000

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Testing Items

Inflammation

cCRP
fSAA
eSAA

Cardio Marker

cNT-proBNP
fNT-proBNP
ccTnl
fcTnl
cNT-proBNP & ccTnl
fNT-proBNP & fcTnl

Hormone

cProg
Equine Prog
Cortisol
T4
Feline T4
TSH
C-RLN (Canine Relaxin)
Equine ACTH

Diabetes

cHbA1c
fHbA1c

Pancreatitis

cPL
fPL

Renal Function

cCys-C
fCys-C
SDMA

Thrombus Function

D-Dimer

Tumor markers

AFP (Alpha-fetoprotein)
CPSE (Canine prostate specific esterase)

Infections

CPV Ag
CDV Ag
CCV Ag
CHW Ag
CPV/CCV Ag
FPV Ag
FeLV Ag
FCoV Ag
FHV Ag
FCAV Ag
Giardia Ag
RV (Rotavirus) Ag
MP (Mycoplasma) Ag
CP (Chlamydia) Ag

Antibody

FIV Ab
FCoV Ab
CPIV Ab
CPV/CDV/ICH Ab
FHV/FCAV/FPV Ab
Toxo Ab
RV Ab
Leptospira Ab
Foal IgG

Blood Parasite

Ehrlichia (EHR) Ab
Lyme (LYM) Ab
Anaplasma (ANA) Ab
Babesia Ag

Gastric Function

HP (Helicobacter pylori)