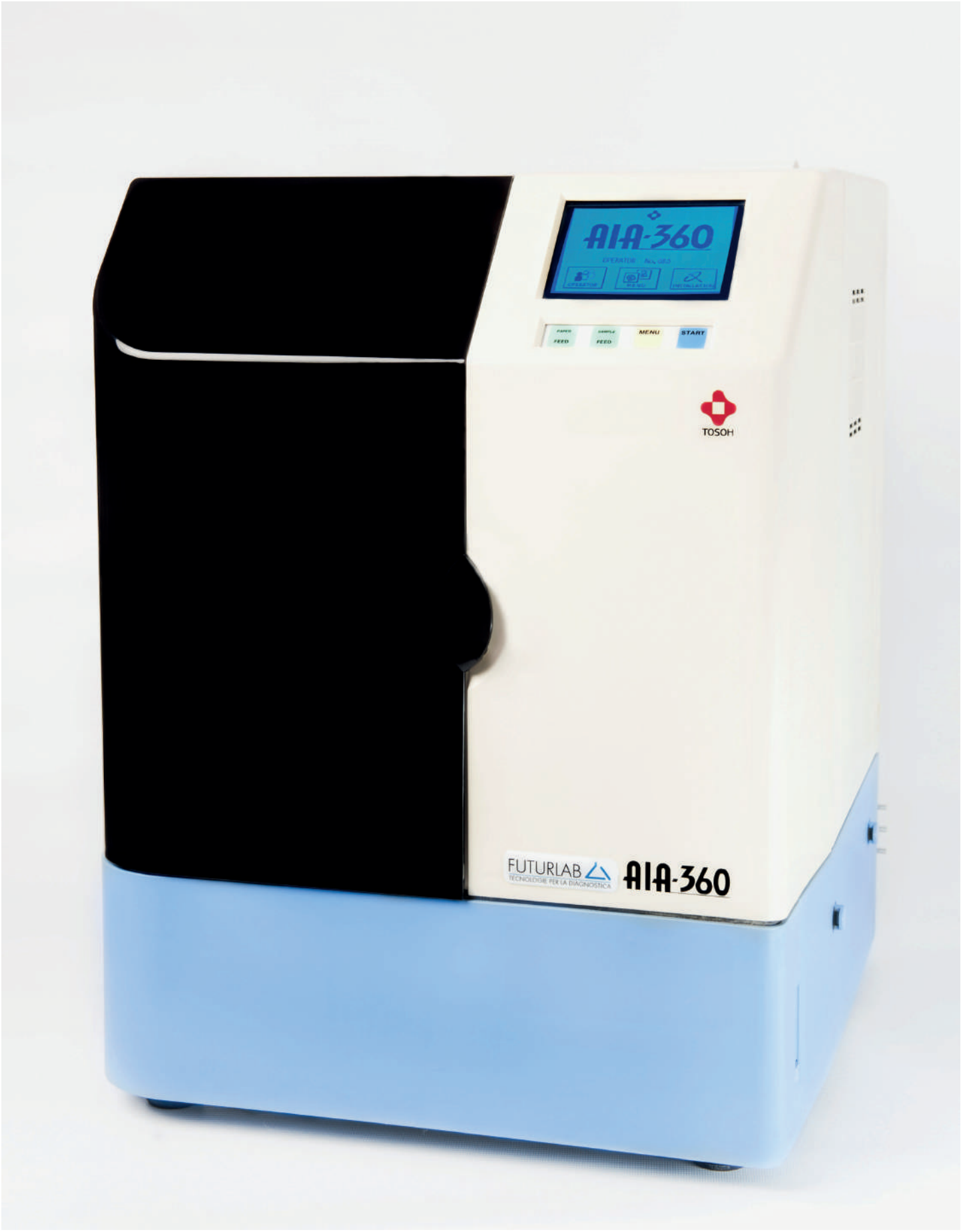
FUTURLAB®
TECNOLOGIE PER LA DIAGNOSTICA

Tosoh Bioscience

AIA® 360

Il top per la gestione di bassi volumi di campioni per dosaggi immunologici



Dimensioni
Larghezza 40 cm
Profondità 40 cm
Altezza 52 cm
Peso 29 kg

Tosoh Bioscience
AIA® 360

Il top per la gestione di bassi volumi di campioni per dosaggi immunologici

Affidabilità

- Identificazione attiva di campioni e reagenti
- Basato sul concetto AIA-PACK per prestazioni analitiche eccellenti
- Procedure di lavaggio potenziate

Semplicità d'uso

- Avvio in meno di 10 minuti
- Nessuna manutenzione quotidiana
- Nessuna necessità di programmare il test
  È sufficiente inserire i campioni e gli AIA-PACK e premere START

Flessibilità

- Può gestire carichi di lavoro di qualsiasi dimensione ottimizzando i consumi di reagente
- Fino a 25 campioni
- Possibilità di caricare nel sistema provette primarie e coppette per test
- Possibilità di carico continuo di reagenti
- È adatto anche alle urgenze

AIA-PACK: un concetto esclusivo

- I reagenti liofilizzati consentono una lunga durata dell'AIA-PACK
- Il principio AIA-PACK consente di trattare la maggior parte dei rifiuti come rifiuti solidi, con un significativo risparmio sui costi di smaltimento e riduzione dei volumi
- Stabilità della calibrazione per 90 giorni
- Per tutti gli analiti è necessario un tempo di incubazione di 10 minuti, offrendo i primi risultati dopo soli 15 minuti
- Nessun rischio di contaminazione tra i campioni e reagenti

Test disponibili per la Veterinaria

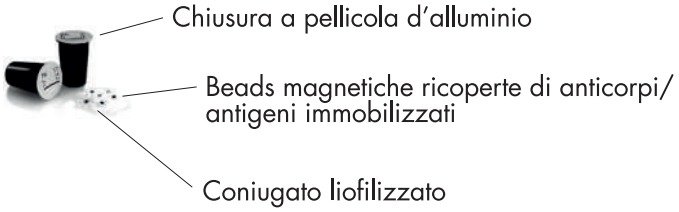
(Contenuto della confezione a partire da 20 test)

- T4
- FT4
- CORTISOLO
- PROGESTERONE
- TROPONINA I 3ª generazione
- D-dimero
- PTH

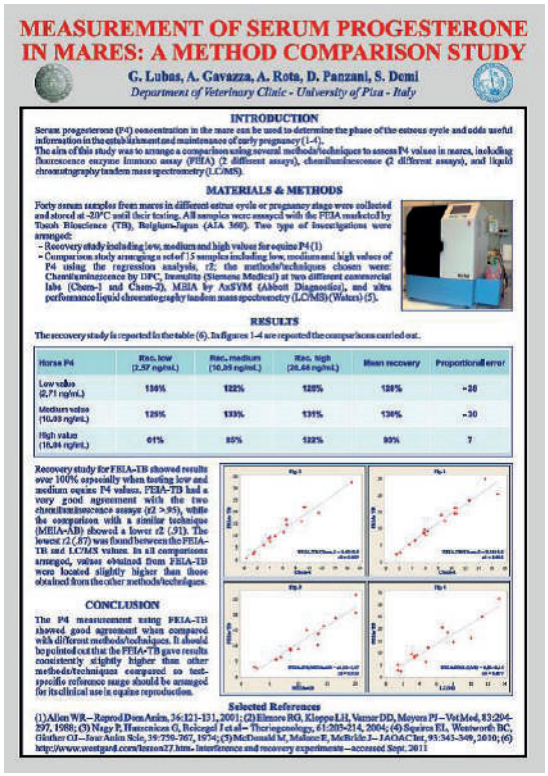
L'intero dosaggio (incubazione, lavaggio e rilevamento) è eseguito nell'AIA PACK.

1 AIA-PACK = 1 test

La coppetta per test "all-in-one" pronta all'uso



Lavori scientifici eseguiti con AIA360



MEASUREMENT OF SERUM PROGESTERONE IN MARES: A METHOD COMPARISON STUDY

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INTRODUCTION

Serum progesterone (P4) concentration in the mare can be used to determine the phase of the estrous cycle and adds useful information in the establishment and maintenance of early pregnancy (1-4).
The aim of this study was to arrange a comparison using several methods/techniques to assess P4 values in mares, including fluorescence enzyme Immuno assay (FEIA) (2 different assays), chemiluminescence (2 different assays), and liquid chromatography tandem mass spectrometry (LC/MS).

MATERIALS & METHODS

Forty serum samples from mares in different estrus cycle or pregnancy stage were collected and stored at -20°C until their testing. All samples were assayed with the FEIA marketed by Tosoh Bioscience (TB), Belgium-Japan (AIA 360). Two type of Investigations were arranged:
- Recovery study including low, medium and high values for equine P4 (1)
- Comparison study arranging a set of 15 samples including low, medium and high values of P4 using the regression analysis, r2; the methods/techniques chosen were: Chemiluminescence by DPC, Immulite (Siemens Medical) at two different commercial labs (Chem-1 and Chem-2), MEIA by AxSYM (Abbot Diagnostics), and ultra performance liquid chromatography tandem mass spectrometry (LC/MS) (Waters) (5).

RESULTS

The recovery study is reported in the table (6). In figures 1-4 are reported the comparisons carried out.

Horse P4	Rec. low (2.57 ng/mL)	Rec. medium (10.38 ng/mL)	Rec. high (20.68 ng/mL)	Mean recovery	Proportional error
Low value (2,71 ng/mL)	136%	122%	125%	128%	+28
Medium value (10,88 ng/mL)	128%	133%	131%	130%	+30
High value (16,04 ng/mL)	61%	85%	122%	90%	7

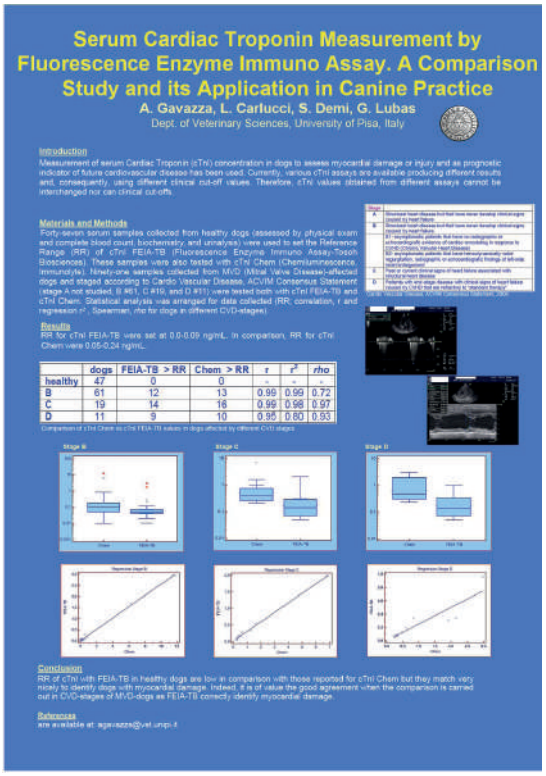
Recovery study for FEIA-TB showed results over 100% especially when testing low and medium equine P4 values. FEIA-TB had a very good agreement with the two chemiluminescence assays ($r2 > 95$), while the comparison with a similar technique (MEIA-AB) showed a lower r2 (.91). The lowest r2 (.87) was found between the FEIA-TB and LC/MS values. In all comparisons arranged, values obtained from FEIA-TB were located slightly higher than those obtained from the other methods/techniques.

CONCLUSION

The P4 measurement using FEIA-TB showed good agreement when compared with different methods/techniques. It should be pointed out that the FEIA-TB gave results consistently slightly higher than other methods/techniques compared so test-specific reference range should be arranged for its clinical use in equine reproduction.

Selected References

(1) Allen WR—Reprod Dom Anim. 36:121-131, 2001; (2) Elmore RG, Kloppe LH, Varner DD, Meyers PJ—Vet Med. 83:204-297, 1988; (3) Nagy P, Huszenicza G, Reiczigel J et al—Theriogenology. 61:205-214, 2004; (4) Squires EL, Wentworth BC, Gleather CO—Iowa Anim Scie. 39:750-767, 1974; (5) McDonald M, Malmer E, McBride J—JAOAC Int. 93:343-349, 2010; (6) http://www.westgard.com/lesson27.htm. Interference and recovery experiments—accessed Sept. 2011



Serum Cardiac Troponin Measurement by Fluorescence Enzyme Immuno Assay. A Comparison Study and its Application in Canine Practice

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Introduction

Measurement of serum Cardiac Troponin (cTnI) concentration in dogs to assess myocardial damage or injury and as prognostic indicator of future cardiovascular disease has been used. Currently, various cTnI assays are available producing different results and, consequently, using different clinical cut-off values. Therefore, cTnI values obtained from different assays cannot be interchanged nor can clinical cut-offs.

Materials and Methods

Forty-seven serum samples collected from healthy dogs (assessed by physical exam and complete blood count, biochemistry, and urinalysis) were used to set the Reference Range (RR) of cTnI FEIA-TB (Fluorescence Enzyme Immuno Assay-Tosoh Biosciences). These samples were also tested with cTnI Chem (Chemiluminescence, Immulite). Ninety-one samples collected from MVD (Mitral Valve Disease)-affected dogs and staged according to Cardio Vascular Disease, ACVIM Consensus Statement (stage A not studied; B #61, C #19, and D #31) were tested both with cTnI FEIA-TB and cTnI Chem. Statistical analysis was arranged for data collected (RR: correlation, r and regression r^2, Spearman, rho for dogs in different CVD-stages).

Results

RR for cTnI FEIA-TB were set at 0.0-0.09 ng/mL. In comparison, RR for cTnI Chem were 0.05-0.24 ng/mL.

	dogs	FEIA-TB > RR	Chem > RR	r	r^2	rho
healthy	47	0	0	-	-	-
B	61	12	13	0.99	0.99	0.72
C	19	14	16	0.99	0.98	0.97
D	11	9	10	0.95	0.80	0.93

Comparison of cTnI Chem vs cTnI FEIA-TB values in dogs affected by different CVD stages

Conclusion

RR of cTnI with FEIA-TB in healthy dogs are low in comparison with those reported for cTnI Chem but they match very nicely to identify dogs with myocardial damage. Indeed, it is of value the good agreement when the comparison is carried out in CVD-stages of MVD-dogs as FEIA-TB correctly identify myocardial damage.

References

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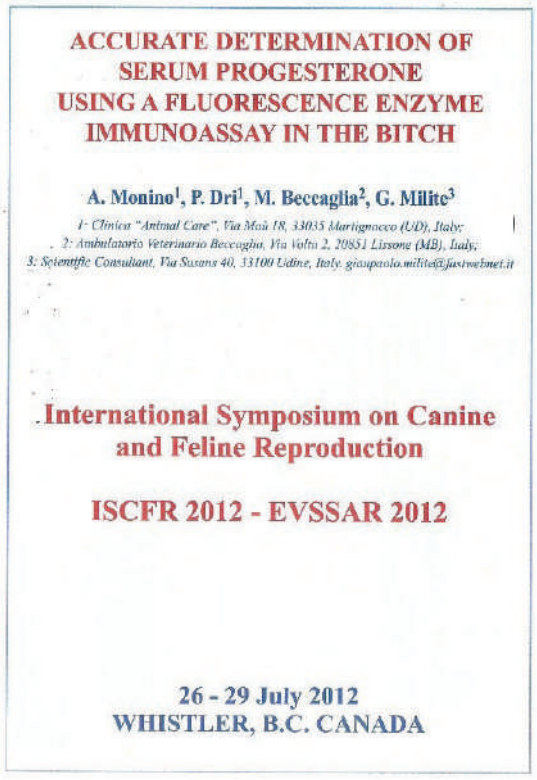

ACCURATE DETERMINATION OF SERUM PROGESTERONE USING A FLUORESCENCE ENZYME IMMUNOASSAY IN THE BITCH

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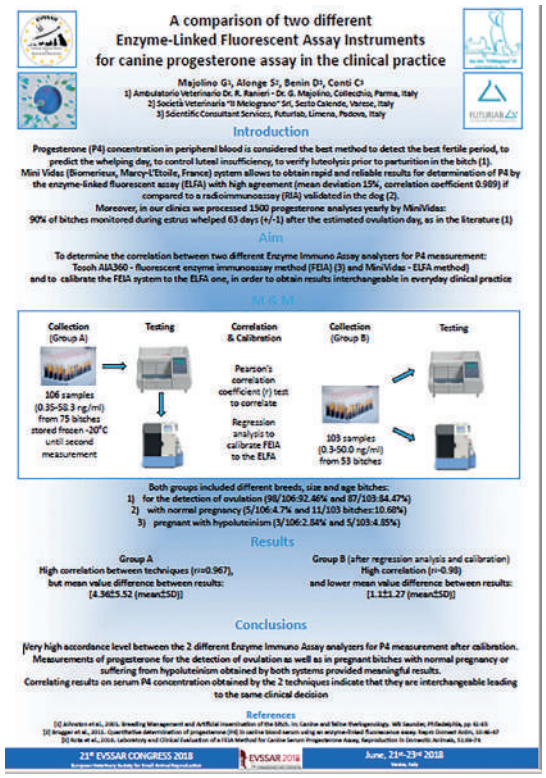

A comparison of two different Enzyme-Linked Fluorescent Assay Instruments for canine progesterone assay in the clinical practice

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3) Scientific Consultant Services, Futurlab, Limena, Padova, Italy

Introduction

Progesterone (P4) concentration in peripheral blood is considered the best method to detect the best fertile period, to predict the whelping day, to control luteal insufficiency, to verify luteolysis prior to parturition in the bitch (1).
Mini Vidas (Biomerieux, Marcy-l'Etoile, France) system allows to obtain rapid and reliable results for determination of P4 by the enzyme-linked fluorescent assay (ELFA) with high agreement (mean deviation 15%, correlation coefficient 0.989) if compared to a radioimmunoassay (RIA) validated in the dog (2).
Moreover, in our clinics we processed 1500 progesterone analyses yearly by MiniVidas:
90% of bitches monitored during estrus whelped 63 days (+/-1) after the estimated ovulation day, as in the literature (1)

Aim

To determine the correlation between two different Enzyme Immuno Assay analyzers for P4 measurement:
Tosoh AIA360 - fluorescent enzyme immunoassay method (FEIA) (3) and MiniVidas - ELFA method)
and to calibrate the FEIA system to the ELFA one, in order to obtain results interchangeable in everyday clinical practice

M & M

Both groups included different breeds, size and age bitches:
1) for the detection of ovulation (98/106-92.46% and 87/103-84.47%)
2) with normal pregnancy (5/106-4.7% and 11/103 bitches-10.68%)
3) pregnant with hypoluteinism (3/106-2.84% and 5/103-4.85%)

Results

Group A
High correlation between techniques (ri=0.967), but mean value difference between results: [4.36±5.52 (mean±SD)]

Group B (after regression analysis and calibration)
High correlation (ri=0.98) and lower mean value difference between results: [1.11±1.27 (mean±SD)]

Conclusions

Very high accordance level between the 2 different Enzyme Immuno Assay analyzers for P4 measurement after calibration.
Measurements of progesterone for the detection of ovulation as well as in pregnant bitches with normal pregnancy or suffering from hypoluteinism obtained by both systems provided meaningful results.
Correlating results on serum P4 concentration obtained by the 2 techniques indicate that they are interchangeable leading to the same clinical decision

References

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