VALIDATION OF A NEW IN-HOUSE IMMUNO-ASSAY FOR CORTISOL MEASURMENT IN CANINE SERUM SAMPLES

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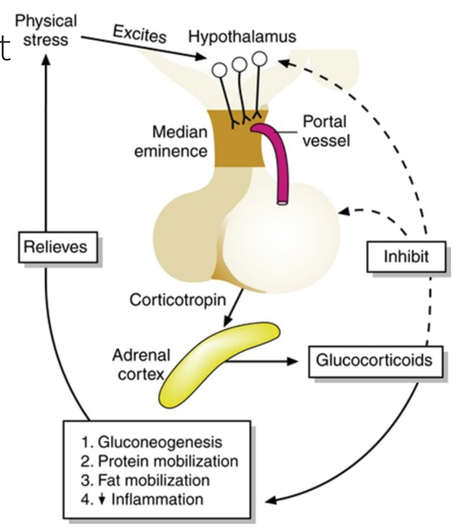
INTRODUCTION

- Cortisol is analysed for the diagnosis of hyper and hypoadrenocorticism, with Hyperadrenocorticism as the most common adrenal disorder in dogs;
  (Gilor & Graves, 2011)
- The use of in-house analysers represents a point of success for clinics or veterinary hospitals;
  (Rishniw, Pion, & Maher, 2012; Services, 2015)
- It is crucial that the equipments are in accordance with the established prerequisites in terms of precision, accuracy, detection limit and quantification



OBJECTIVE

- Validate the performance of a new in-house immunoassay based on Surface Plasmon enhanced Fluorescence method for canine cortisol measurement in serum.

COMPARED

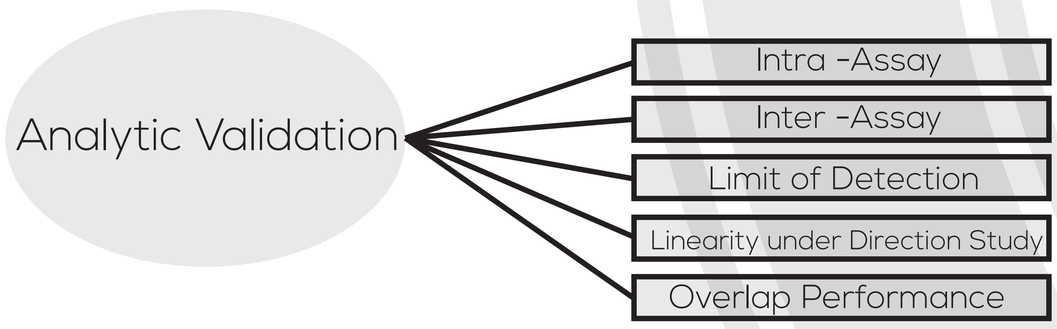
Another validated method
Immulite, Siemens

FUJI DRI-CHEM Immuno AU10V

MATERIALS AND METHODS

- Serum Samples from 59 Clinical cases
- Dogs of diferent age, breed and gender

- Serum Samples from 5 adult, male beagles injected once s.c with prednisone at 5mg/kg
- 3 male adult Beagle dogs injected with 0.9% NaCl (0.1 ml/kg) subcutaneous



RESULTS AND DISCUSSION

Table 1 Cortisol concentration obtained in Dri-Chem Immuno AU10V

		Mean (µg/ml)	SD	CV(%)
Intra-assay	High	17.3	0.3	1.7
	Medium	8.9	0.2	1.9
	Low	1.3	0	0
Inter-assay	High	27.8	0.5	1.7
	Medium	13.4	0.25	1.9
	Low	3.6	0.05	1.4

Intra and Inter-assay CV was below 2%

↓

Lower than 15%

↓

High Precision

Detection limit was 0

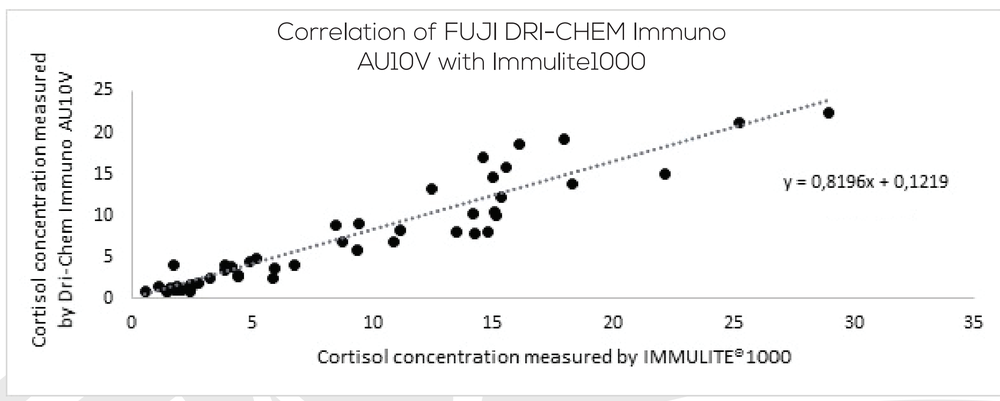


Figure 1. Regression equation of all samples measured with the two methods (n=59)

- Strong Positive correlation between the two analysers.

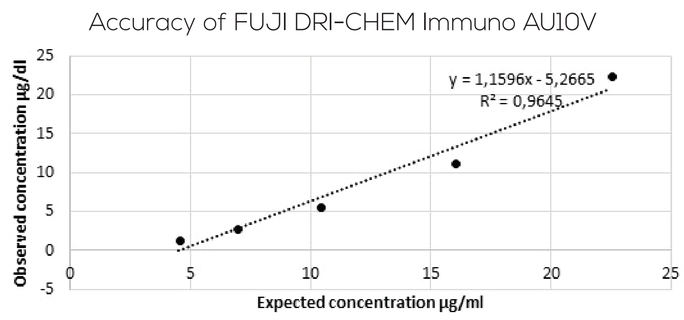


Figure 2. Representative graph of linearity under dilution of a canine serum sample

Linearity under dilution confirmed the accuracy of the method

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Correlation coefficients close to 1

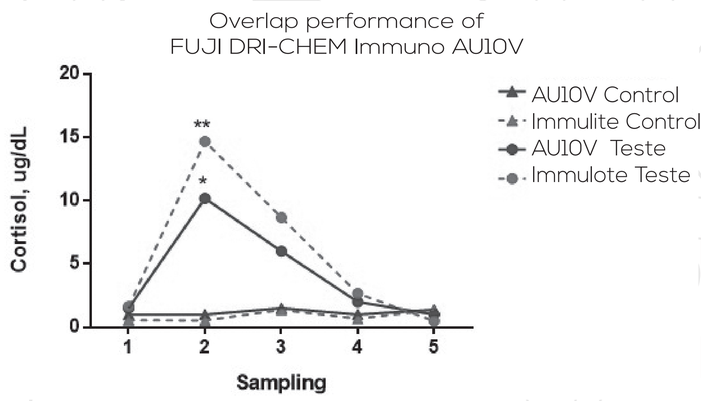

Figure 3. Median concentration of cortisol before (Sampling 1) and after (Sampling 2-5) administration. Measured with AU10V (solid lines) and Immulite 1000 (discontinues line) systems. * P<0.05; ** P<0.01

- AU10V showed similar cortisol monitoring profile with Immunite

Cortisol ↑ 2 hours after administration.

Cortisol ↓ to baseline values 12 hours later.

CONCLUSION

The validated method is precise and accurate when measuring cortisol in canine serum samples. Furthermore, it showed high correlation with previously validated method for cortisol determination in canine serum samples.

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