

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

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## INTRODUCTION

Cortisol is analysed for the diagnosis of hyper and hypoadrenocorticism, with

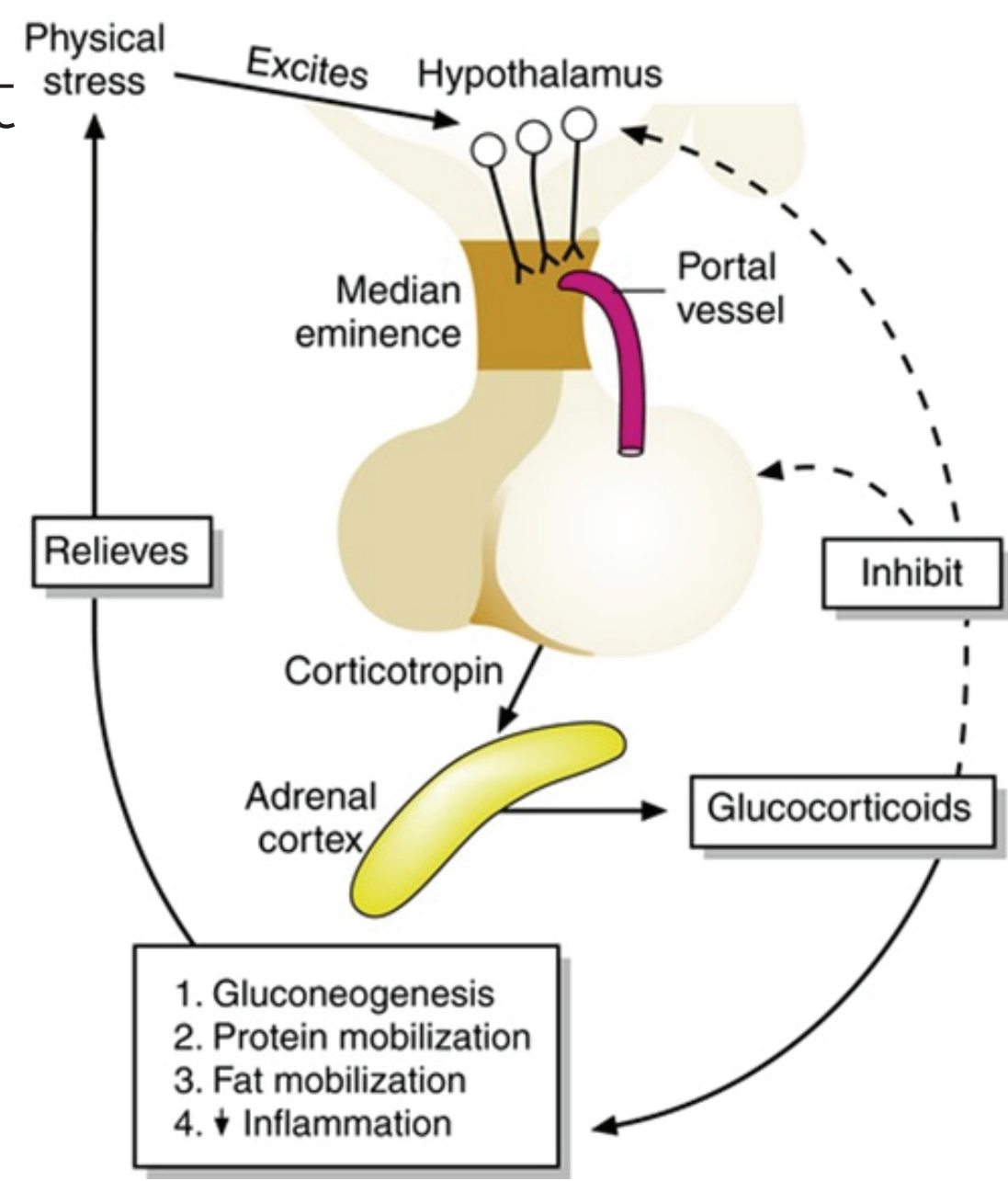
**Hyperadrenocorticism** as the most common adrenal disorder in dogs;

(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



## 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

## 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

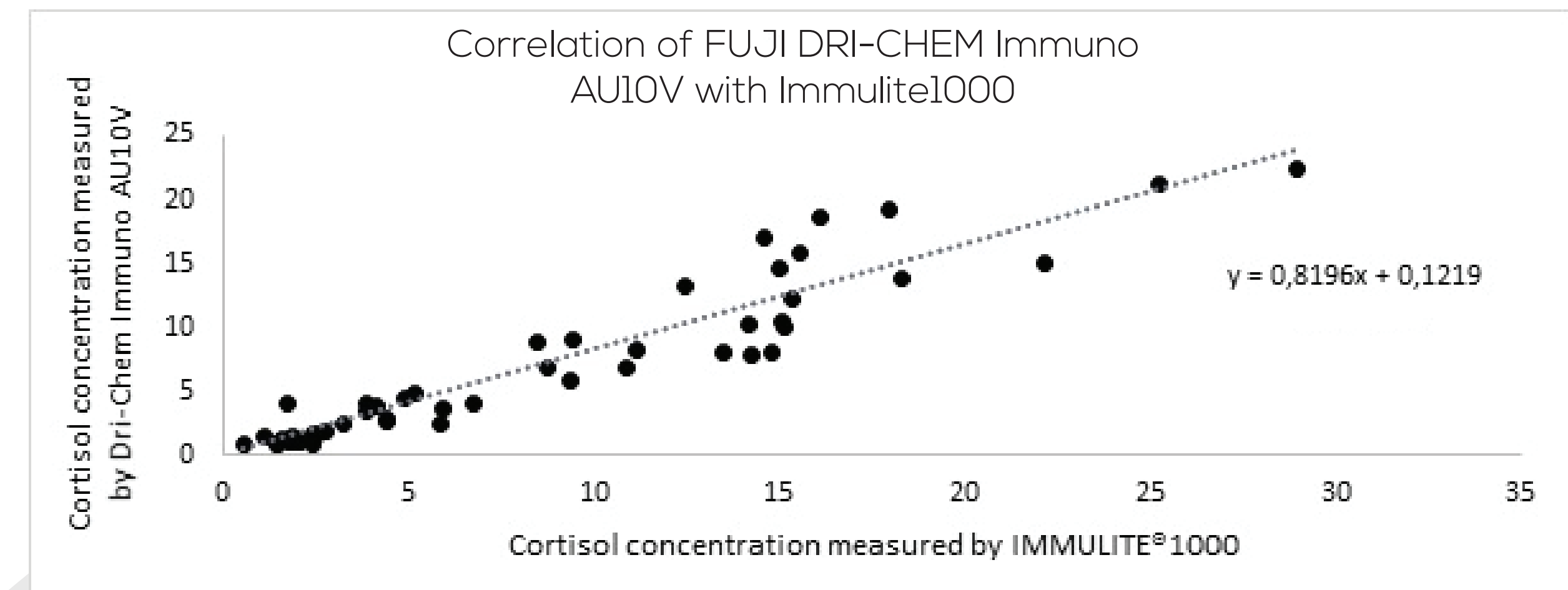


Figure 1 Regression equation of all samples measured with the two methods (n=59)

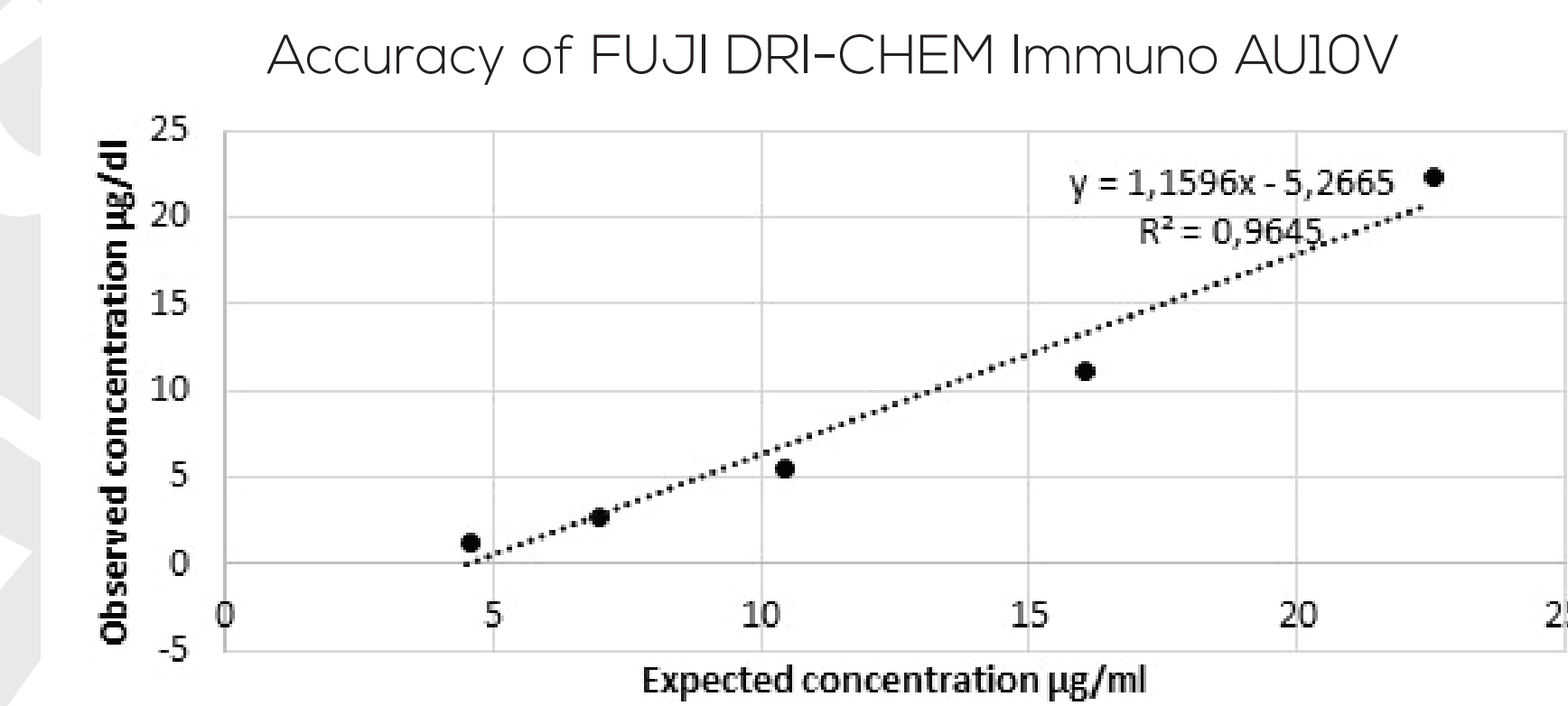


Figure 2. Representative graph of linearity under dilution of a canine serum sample

Linearity under dilution confirmed the accuracy of the method

Correlation coefficients close to 1

## MATERIALS AND METHODS

- Serum Samples from 59 Clinical cases
- Dogs of different 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

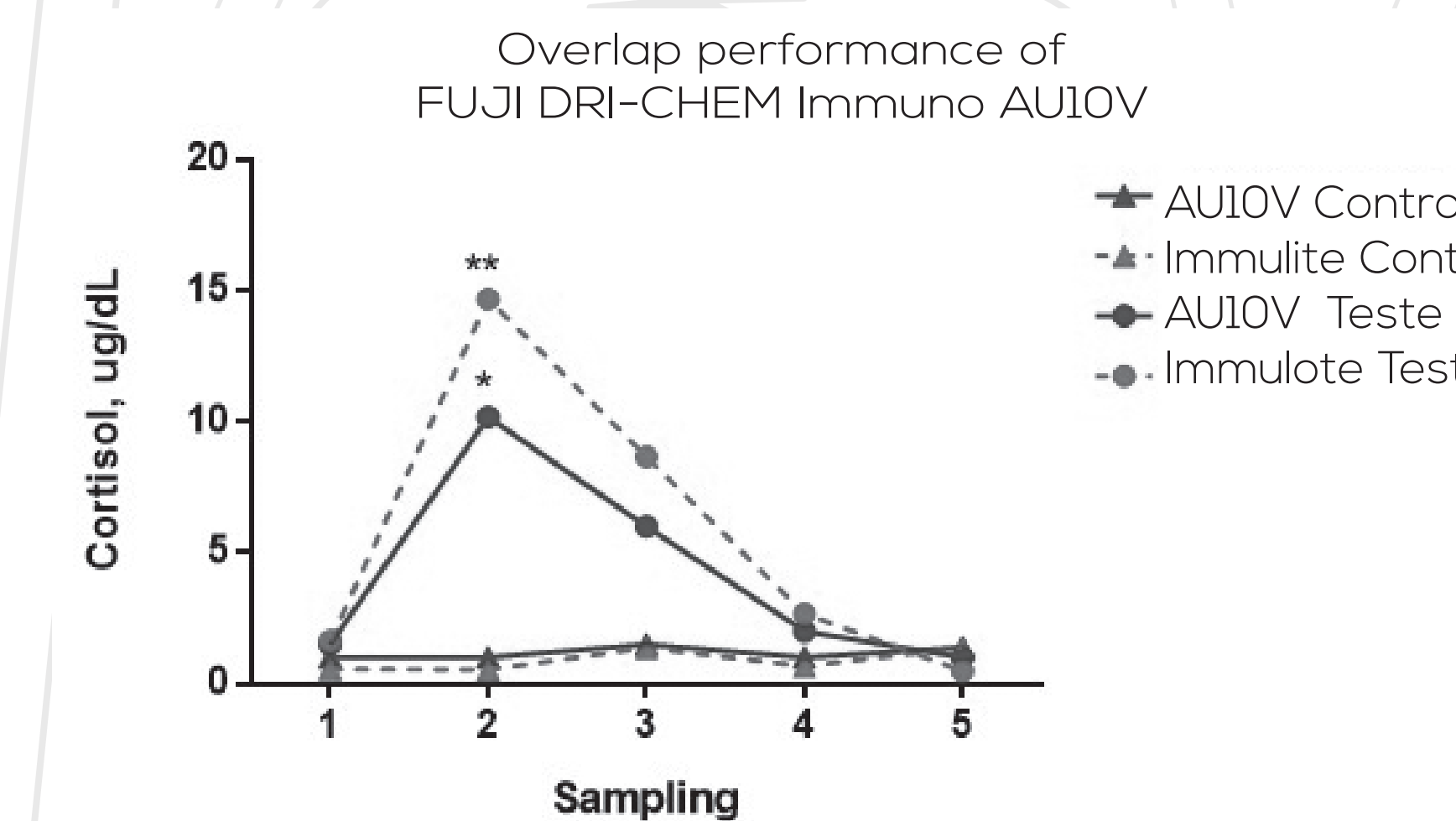


Figure 3. Median concentration of cortisol before (Sampling 1) and after (Sampling 2-5) administration. Measured with AU10V (solid lines) and Immulite 1000 (discontinuous line) systems. \* P<0.05; \*\* P<0.01

AU10V showed similar cortisol monitoring profile with Immulite

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.

References: Gilor, C., & Graves, T. K. (2011). Interpretation of laboratory tests for canine cushing's syndrome. Topics in Companion Animal Medicine, 26(2), 98-108.  
 Rishniw, Pion, & Maher, 2012; Services, 2015 Rishniw, M., Pion, P. D., & Maher, T. (2012). The quality of veterinary in-clinic and reference laboratory biochemical testing. Veterinary Clinical Pathology, 41(1), 92-109.  
 Services, M. (2015). UK Standards for Microbiology Investigations. Bacteriology, B 55(5.2), 1-21.

Analytic Validation

Intra -Assay

Inter -Assay

Limit of Detection

Linearity under Direction Study

Overlap Performance