

## **DETERMINING SPECIFIC IGG FOR THE DIAGNOSIS OF FOOD ALLERGIES IN DOGS**

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### **Objectives of this study:**

Adverse reactions to certain foods constitute 23% of non-seasonal allergic dermatitis in dogs. These reactions can be twofold: food intolerance and food allergy. It has recently been demonstrated that dogs allergic to certain foods have high levels of specific immunoglobulin E and G when exposed to the antigens contained by the foods which are responsible for and provoke the sensibilization. Alergovet S.L. has an enzymatic test (PET-ELISA) available to determine the levels of specific IgE in serum when exposed to food allergens. As a complement to this method, a trial has been conducted using the ELISA technique to measure specific IgG when exposed to certain foods. The objective of this study has been to test the validity of the method in the lab.

### **Methodology and materials:**

In summary, the method consists on the coupling of the food extracts to the wells of microtiter plates followed by the sequential incubation with the serum samples, a polyclonal antibody (canine anti-IgG) produced in sheep and marked with peroxidase and, finally, an enzymatic substrate (OPD) which produces a coloured compound, being the colour intensity proportional to the concentration of specific IgG when exposed to the food present in the serum.

The optimization of the method has been achieved using serum from allergic dogs provided by the Dermatology Practice of the *Hospital Clínico de la UCM*, dogs which had been previously diagnosed by an elimination diet and subsequent provocation, as well as serum from healthy dogs. We have also used serum that came from our serum bank.

### **Results:**

The preparation and coupling of the extracts has been optimized, as well as the trial conditions (dilutions, temperatures and incubation times) for 20 different foods. We have also studied the analytical parameters of the optimized method, observing a good parallelism of the curves obtained from different serum samples, a wide serial range which comprises five serial dilutions (factor 2) and excellent repeatability values (intra-trial coefficient of variation of 4.5%) and reproducibility (intra-trial coefficient of variation of 6.2%).

Finally, we have implemented a screening with serum from 30 dogs diagnosed with food allergies and we have determined that the method developed allows discrimination of these against serum from non-allergic dogs used as negative control.

**Conclusions:**

Up until now, the method generally accepted as valid for the confirmation of an adverse reaction to certain foods has been an elimination diet and subsequent provocation. At Alergovet, we have developed an ELISA method to determine the specific IgG when exposed to a wide number of foods. This method, together with the method that evaluates the levels of specific IgE, may constitute an alternative to the elimination diet / provocation and, in addition, it may be a useful tool in the diagnosis of canine food allergies in order to contribute to the correct elaboration of an elimination diet.