Inaccuracy of hair and saliva test for allergies in dogs

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Introduction and Objective

Several US companies offer saliva and/or hair tests for allergies in companion animals, but offer no validation of their test accuracy.

The objective of this prospective study was to determine if the Immune IQ™ test could reliably differentiate between samples from a normal dog, an allergic dog and fake pet fur and tap water.
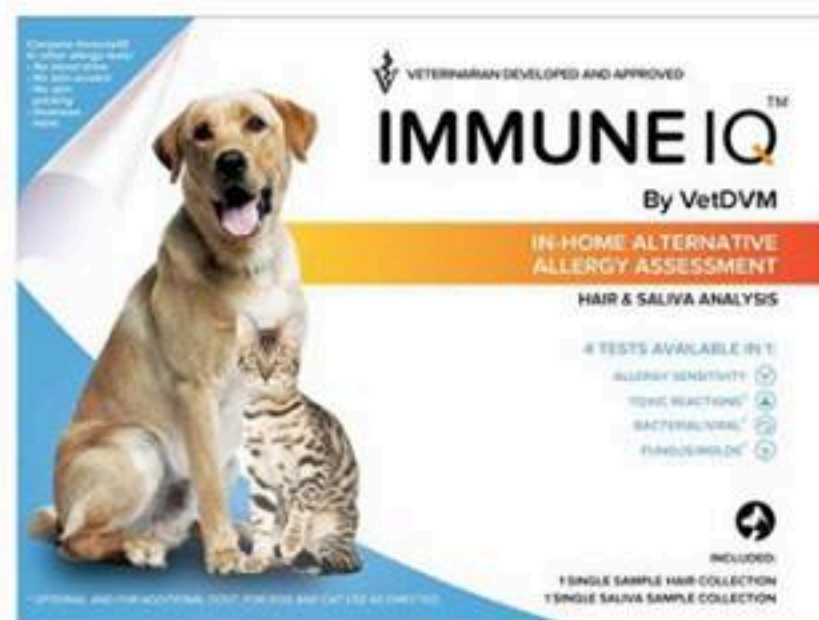
Materials and Methods

Ten fur/saliva samples were submitted from a known atopic/food allergic dog and ten from a normal, non-allergic dog, as well as five samples of realistic appearing "fake" fur from a costume cat ear clip and tap water.

Laboratory testing was performed for 128 food and environmental allergens. Specific testing procedures were described as proprietary and were not detailed by the company. Results were reported as RED (things to avoid), YELLOW (caution), and GREEN (not a problem). (Figure 1)

Figure 1. First page of 'results' from one sample of fake hair and tap water.

Statistics

Statistical analyses were performed to *determine if the response distribution differed significantly between dogs*, using the Pearson chi-square coefficient, as well as to determine test-retest reliability by calculating Cohen's kappa for each allergen.

Results

The distribution of Immune IQ™ test results among allergic dog, non-allergic dog and fake fur samples were not distinguishable from those expected from random chance, after correcting for multiple comparisons. Test-retest reliability was poor to slight. (Table 1)

Conclusions

The Immune IQ™ test results could not differentiate between an allergic dog, a non-allergic dog and fake animal fur, and should not be recommended as an alternative to hypoallergenic diet trials or intradermal or serologic allergy testing in companion animals.

	Sensitivities (sc)			p-value* (Combined Reliability - Kappa)
	OK	Neutral	Not OK	
Chicken				0.93
Miz	40.0%	60.0%	0.0%	(-0.13)
Stuffy	50.0%	50.0%	0.0%	
Trigger	44.4%	55.6%	0.0%	
Kappa	-0.13	-0.13	-	
Dairy				1.00
Miz	0.0%	0.0%	100.0%	(-)
Stuffy	0.0%	0.0%	100.0%	
Trigger	0.0%	0.0%	100.0%	
Bread				0.46
Miz	0.0%	10.0%	90.0%	(-0.07)
Stuffy	0.0%	0.0%	100.0%	
Trigger	0.0%	0.0%	100.0%	
Grass				0.19
Miz	0.0%	90.0%	10.0%	(0.01)
Stuffy	0.0%	50.0%	50.0%	
Trigger	0.0%	77.8%	22.2%	
Salmon				0.44
Miz	40.0%	40.0%	20.0%	(-0.06)
Stuffy	16.7%	50.0%	33.3%	
Trigger	11.1%	33.3%	55.6%	

Table 1. Sample of representative allergy test results.
Miz: Allergic dog; Stuffy: Fake fur; Trigger: Normal dog

* Pearson Chi-Square test to determine if observed distribution differs significantly from the expected (where the expected reflects no difference in the results across dogs)