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Comparing conventional and acetoneprecipitated dog allergen extract skin testing

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To the Editor:

The major allergen of dog, Can F-1, has been isolated, purified, and expressed.¹ Therefore it is now possible to analyze allergen extracts for potency expressed as content of major allergen. Reports from ALK-Abello Inc indicated that unstandardized dog extracts contain about 5 µg of Can F-1 per milliliter.² Acetone-precipitated (AP) dog extract (Hollister-Stier) has been reported to contain approximately 180 µg of Can F-1 per milliliter (in-house analysis by Hollister-Stier, personal communication from Terrance Kordash, MD). Recently our institution began using 2 different Can F-1 preparations for dog dander sensitization testing. This study looks at the data compiled over a period of time and then compares 2 dog dander extracts by titrated skin prick tests.

Data were compiled from 123 sequential skin test subjects, all of whom had skin testing with conventional Can F-1 dog extract (Greer) and AP dog extract (Hollister-Stier). The results were compared, and means were calculated. From the cohort of 123 subjects, 59 (48% of all subjects) had mean wheals of 3 mm or more to at least 1 extract. Of those with positive results, 59 (100%) tested positive to AP (mean wheal 6.9 mm), and 35 (59%) tested positive

to regular dog (mean wheal 3.4 mm). Of the 35 with positive results to both extracts, 31 (89%) had a mean wheal size after exposure to AP dog that was greater than that after exposure to regular dog. No person was found to test AP negative but conventional positive.

After institutional review board approval, volunteers (aged 18 to 70 years and without severe chronic illness) were recruited who had a history of skin prick test positivity to dog. Subjects were brought to the skin-testing laboratory and gave informed consent to the procedure. To qualify, they were required to have a mean histamine wheal of 3 mm or more and mean conventional and AP dog wheals of 5 mm or more. Six subjects had titrated skin tests performed on their backs.³ A standard small pox needle (Hollister-Stier) was used for all skin testing.⁴ The conventional dog extract was Hollister-Stier Dog Hair-Dander, 1:10 wt/vol, and the AP dog extract was Hollister-Stier Acetone Precipitated Dog Hair-Dander, 1:50 wt/vol. Four rows of testing were used: row 1 (top to bottom), full-strength conventional dog extract followed by serial (log) 3-fold dilutions down to 1:1000 dilution; row 2, 1:1000 dilution followed by serial (log) 3-fold increase to full strength; and rows 3 and 4, same pattern but with the AP preparation. The titrated skin tests were then compared and put into tabular form (Table I).

Table I. Mean diameter titrated skin prick tests

AP dilution	Conventional 1:10 dilution		Conventional full strength	
	Mean difference (mm)	Paired <i>t</i> test	Mean difference (mm)	Paired <i>t</i> test
None	−9.2	0.02	−6.3	0.04
1:10	−6.5	0.01	−3.5	0.03
1:100	−3.6	0.01	−0.8	0.39
1:1000	−0.7	0.55	2.3	0.09

During this study there were no adverse events, and skin testing with both forms of dog extract was tolerated well.

Mean wheal sizes to full-strength conventional and AP dog extract were 7.2 and 13.4 mm, respectively. Paired *t* tests were used to assess the significance of difference between the 2 skin test extracts. Relative potency of the 2 extracts was determined by the concentrations producing a 5-mm mean wheal (approximately 1:10 dilution for standard and 1:1000 dilution for AP). AP diluted 1:100 is roughly equivalent to full-strength conventional, and AP diluted 1:1000 is roughly equivalent to conventional diluted 1:10 strength.

These results show that previous dog skin testing methods may have been inadequate in revealing many patients allergic to dog. AP dog extract may be used in the future to identify more patients allergic to dog and may also be better for use in allergen immunotherapy. Because this is a more potent extract, care should be taken when it is used for potential immunotherapy.

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References

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1. Baldwin L, Plunkett G, Eddy J, Dailey F, Naugler D. Analysis of dog hair and epithelial extracts by immunoblotting (IB) and IgE ELISA [abstract 117]. J Allergy Clin Immunol 1999;103:S30.

2. Nelson H. The use of standardized extracts in allergen immunotherapy. J Allergy Clin Immunol 2000;106:41-5.

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3. Dreborg S. The skin prick test: methodological studies and clinical applications [dissertation]. Linkoping, Sweden: Linkoping University Medical; 1987. No. 239.

4. Nelson H, Lahr J, Buchmeier A, McCormick D. Evaluation of devices for skin prick testing. J Allergy Clin Immunol 1998;101:153-6.

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