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I have read with interest the article in the February issue of *Allergy* by Ćirković et al. (1) on the chemical modification of allergens. This publication describes the substitution of mainly lysyl groups of the proteins in an extract of *Dactylis glomerata* by succinic and maleic anhydrides.

I would agree with the authors that there are some grounds for suggesting that such modified allergens might have utility as therapeutic allergy vaccines. I would, however, suggest to the authors that they consider some evidence published in a series of earlier articles by us (2–4) before proceeding to clinical evaluation of their materials.

We used a number of agents, including various acid anhydrides and glutaraldehyde, to modify an extract of timothy grass pollen. All agents were capable of modifying the extract so that IgE reactivity was reduced, but the ability to produce allergen-specific IgG antibodies in experimental animals was essentially retained. What may be of greater importance was that the T-cell reactivity of the modified allergens was not lost (unpublished), consistent possibly with a substantially maintained primary structure of the allergens.

Glutaraldehyde was our modifying agent of choice for two reasons. Firstly, a higher molecular weight material ensues, as suggested by Ćirković et al., which is likely to have advantages for subcutaneous administration. We would concede that for mucosal application monomerically modified allergens may be more appropriate. The second reason for our choice and one that the authors should consider is that in our hands the acid anhydride-modified allergens induced high levels of antibodies to the modifying agents, whereas this effect was marginal when aldehydes were used for modification.

We do not know whether the presence of hapten-specific antibodies would eventually lead to a loss of activity of the

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allergoid after repeated administration or whether hapten-specific IgE would be induced, canceling the safety advantages of using allergoids. We felt, however, that the

complications of ensuring that such events would be of no significance were such that we should not proceed into clinical trials with acid anhydride-modified allergens.

References

1. Ćirković TD, Bukilica MN, Gavrović MD, Vujčić ZM, Petrović S, Jankov RM. Physicochemical and immunologic characterization of low-molecular-weight allergoids of *Dactylis glomerata* pollen proteins. *Allergy* 1999;**54**:128–134.
2. Moran DM, Wheeler AW. Chemical modification of crude timothy grass pollen extract. I. *Int Arch Allergy Appl Immunol* 1976;**50**:693–708.
3. Wheeler AW, Jenkins PM, Moran DM. Chemical modification of crude timothy grass pollen extract. II. *Int Arch Allergy Appl Immunol* 1976;**50**:709–728.
4. Moran DM, Wheeler AW, Overell BG, Woroniecki SR. Chemical modification of crude timothy grass pollen extract. III. *Int Arch Allergy Appl Immunol* 1977;**54**:315–321.