

Correspondence

Morrow Brown needle facts

To the Editor:

We were among the first to use the disposable version of the Morrow Brown needle in the United States and were instrumental in making it available to allergists in this country; therefore, we feel qualified to comment on the letter by Mahan et al. (JACI 1991;87:754) in which it was suggested that users examine the points of these devices, claiming anecdotally that some may be flawed.

We first became aware that Mahan et al. found faulty samples of the needle last summer, in a personal communication from another physician. On behalf of the importer, one of us wrote to Dr. Spector to suggest that any flawed samples be returned for study and replacement, since both the importer and manufacturer are anxious to assure quality. That letter was never answered.

Not having noted any problems with the product in our own practice, but aware that any mass produced item may be subject to occasional flaws, we undertook to study the incidence of damaged needle points in our own supplies. Our technicians were instructed to save and count all unusable or flawed needles beginning Dec. 1, 1990. Since that time, we have performed approximately 4700 skin tests with the Morrow Brown needle, and we have accumulated two unusable points, an incidence of 0.00043%. Aller//Guard, Inc. reports that only one shipment of needles has ever been returned to them for replacement because of damaged units. Apparently our experience and that of other users has been in marked contrast to that of Mahan et al. who must have received a small number of faulty units that they did not return for replacement.

The company says it is unaware of any needle orders from Drs. Mahan or Spector since 1988. Units of that vintage are no longer on the market. Among other improvements in the needle since that time have been a change in color; they are now blue rather than clear plastic. This makes the needles easier for many operators to use and improves one's ability to examine the points for possible flaws. This information also was previously conveyed to Dr. Spector but remains unacknowledged by him.

Since 1985, more than 13.5 million of these devices have been used by American allergists, according to the importer, Aller//Guard, Inc. (Contrary to the Mahan et al. letter, the device is actually manufactured in England by HMB Medical Concepts Ltd., a British firm).

Since it became available in the United States, several studies have been performed with this device to standardize skin test procedures among multiple centers¹ or in which the device was compared to other skin testing methods.² The authors of these studies have variously reported that the Morrow Brown needle provides good reproducibility and, in some instances, was most preferred by patients.³ In no case was the device ever criticized on the basis of product quality.

Many devices are currently used by allergists for skin

testing, although few have been designed, as has the Morrow Brown needle, specifically for that purpose. All devices have their advocates. We encourage fair-minded physicians interested in these matters not to be influenced by either positive or negative testimonials but to read the references provided and then test the Morrow Brown needle and other available devices in their own practices and form their own opinions as to which appears best for them.

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Do the group II dust mite allergens correspond to lysozyme?

To the Editor:

Much effort has been devoted to the characterization of the allergens of house dust mites, such as *Dermatophagoides pteronyssinus* and *D. farinae*, since they are associated with atopic asthma. Such studies have culminated in the immunochemical, biochemical, and molecular characterization of several allergens, in particular allergens designated groups I, II, III, and IV. The allergen groups I, III, and IV have been demonstrated to be a cysteine protease, trypsin, and amylase, respectively, suggesting that some of the more important mite allergens play a role in mite-digestive processes. Despite these gains, the identity of the major allergens designated group II remains unknown, notwithstanding the fact that they have been cloned and that their amino acid sequences have been determined.¹ Data from our laboratory would now suggest that the group II allergens correspond to lysozyme, an enzyme associated either with defense against bacteria or in food digestion.

This suggestion is based on comparative biochemical and physicochemical data derived from studies that we have performed on enzymes present in mite fecal and whole-body extracts. In brief, we have been able to demonstrate that both types of extract are rich in lysozyme as judged by their capacity to degrade *Micrococcus lysodeikticus*, a bacterial

TABLE I. A comparison between lysozyme and the group II allergen from *Dermatophagoides pteronyssinus*

Parameter	Group II allergen	Mite lysozyme
Molecular weight	15,000	16,000
Isoelectric point	5 > 8	5 > 8
Precipitation by ammonium sulfate (percent saturation)	50%-80%	50%-80%
Acid stable	Yes	Yes
Heat stable	Yes	Yes
Present in both body and fecal extracts	Yes	Yes

indicator of enzyme activity.² Further investigation has revealed that the mite enzyme is physicochemically similar to the group II allergens and also that the latter appear to be similar to lysozyme from other sources. For example, both type c lysozyme (e.g., from hen egg white) and the group II mite allergens contain a similar number of amino acid residues (129), and both are resistant to denaturation by high temperature and low pH.³ Mite lysozyme is also similar to the group II allergens with regard to a number of parameters,^{3,4} some of which are summarized in Table I. In addition to these similarities, the observation that a particular disulphide bond is required to maintain antigenicity in hen egg white lysozyme has also been used as a paradigm to explain the failure of large peptides derived from cDNA constructs of *Der p* II to react with mite-specific IgE.⁵

To date, we have been unable to demonstrate any sequence homology between the group II allergens and any lysozyme thus far characterized, and this might cast doubt on our interpretation that the group II allergens are likely to be equivalent to lysozyme. However, studies on lysozymes from diverse sources have demonstrated that, despite similar enzymatic properties, sequence homology may be minimal or absent, and thus, the lack of homology between

the group II allergens and lysozyme would not be inconsistent with these observations. The key to resolving our hypothesis will be to isolate and then sequence enzymatically active mite lysozyme and compare its sequence with that of a group II allergen. Thus far, this has proved difficult because of the susceptibility of mite lysozyme to degradation by proteases present in the mite extracts available to us, although it should be pointed out that similar observations for *Der p* II have not been specifically reported by other workers. However, we have recently been able to isolate the enzyme from mite fecal extracts by affinity chromatography after controlling for proteolysis and should be able to report on the amino acid sequence in due course.

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