

Letters to the Editor

The allergen cocamidopropyl betaine

Dear Sir

We read the work by Fowler et al. (1) with considerable interest. As we had previously observed (2–5), they note that products containing cocamidopropylbetaine (CAPB) are allergenic, and point out the risks of the impurities in the products available on the market. However, some procedural, clinical and analytical aspects of this work have led us to make the considerations listed below.

(i) The authors exclude the possibility that dimethylaminopropylamine (DMPA) may play an aetiological rôle in contact allergies to detergents containing CAPB, on the basis that their tests were made with products “essentially” free from DMPA. This is not justified unless we know for certain what DMPA content was present in the patients’ habitual washing products.

(ii) The above exclusion was also based on the results of patch tests to 0.1% pet. DMPA, without higher concentrations having been tested. The reason adduced was the “discomfort” such tests would have provoked, and yet the authors’ overall assessment design was an involved procedure by elimination, which lasted over 6 weeks, required many successive challenges in the patients, and featured a progressive drop in the population such as to result in a statistically irrelevant final sample.

(iii) The authors affirm that amidoamine (AA) is the only allergen present in products with a CAPB base. However, they do not test chemically pure AA, and also state that there was no relationship between the AA content in the CAPB products tested and the number of allergic reactions observed. They attribute this discrepancy to the “minimal differences” in “expected” content, in clear contradiction to the analytical value of the content itself. Besides, there are no grounds for excluding that the reactions observed by the authors could have been due to the residual DMPA content (34 ppm), particularly bearing in mind that we ourselves have demonstrated that DMPA is susceptible to a carrier effect exerted by tensioactive substances (3).

None of the quantitative elements describing the impurities contained in the CAPB products available on the market or used in the tests are precise: the definitions “below the detection limit” and “essentially absent” have no scientific meaning unless supported by data detailing these detection limits and the contents analyzed. Nor does Table 2 on the “typical content of impurities” in commercially available betaine cover the range of betaines existing on the market or the upper and lower limits of impurities present in these products; in fact, these are much wider than is claimed.

The authors state that the positive results we observed could have been due to irritant reactions having been mistaken for allergic reactions. Without wishing to insist on our personal experience in this field, we would like to remind the authors that there are various methods for distinguishing irritant from allergic reactions, while the same objection could be made to the authors themselves as to their tests on 0.1% AA, a potentially irritant concentration. Finally, we feel it incumbent upon us to draw to their notice that the weight of the existing literature bears unanimous witness to the allergenic properties of DMPA.

To conclude, we reiterate what was stated in our reports (2–5) and has since been confirmed in over 8000 subjects, although we are well aware that not even the latter efforts suffice to exclude that DMPA and/or AA may be allergenic. The use of substances with a scientifically demonstrated high grade of purity in large patient populations may resolve the controversy.

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References

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Reply

Dear Sir

We thank Drs. Angelini and Rigano for their astute comments regarding our paper, which underscores one of the greatest difficulties that we have found in dealing with an allergen such as cocamidopropyl betaine, namely the determination of irritant versus allergic patch-test reactions. We have the highest regard for the capabilities of Drs. Angelino and Rigano and in no way did we intend to call into question their patch-test interpretations. We fully recognize that interpreting reactions to CAPB, amidoamine, and DMPA may often be difficult. Our major point is simply that in our patients and in the CAPB supplies used by a major American manufacturer, amidoamine seems to be the major allergen. As we stated in the paper, due to differences in contaminant levels found in CAPB manufactured by various sources, it is certainly possible that DMPA may be a more import-

ant allergen in European patients as compared to ours. We would point out that the detection limit for DMPA in our studies was 3 ppm and, therefore, the term “essentially absent” is, we feel, a valid one.

The North American Contact Dermatitis Group is initiating a study this summer to determine the prevalence of allergy to amidoamine, so perhaps this will help us find out whether exposures in American and European patients do indeed differ.

Yours sincerely

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