Table I. Patch test results with colophony (20% pet.) and “oakmoss” (1% pet., both by Trolab) in 12614 patients between 1992 and 1999

<table>
<thead>
<tr>
<th>“Oakmoss”</th>
<th>Sum/(%)</th>
<th>Colophony</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>neg.</td>
<td>10905</td>
</tr>
<tr>
<td></td>
<td>?/IR</td>
<td>134</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>261</td>
</tr>
<tr>
<td></td>
<td>++</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>+++</td>
<td>34</td>
</tr>
<tr>
<td>Sum/(%)</td>
<td>11464</td>
<td>315</td>
</tr>
</tbody>
</table>

``Oakmoss” (90.9%) (2.5%) (4.2%) (1.8%) (0.6%) (100.0%)

The notion of minute traces of resin acids present in “oakmoss” being capable of eliciting a positive reaction at least in patients with extreme sensitivity to colophony. Of course, nonspecific mechanisms like the “angry back syndrome” must also be considered if any very strong reaction is observed, and, indeed (very) strong reactions are generally associated with an increased number of concomitant patch test reactions (J. Brash, personal communication, 2000).

Last but not least the possibility of concurrent sensitization to “oakmoss” and “treemoss”, which are used together in perfumes (Dahlquist and Fregert, 1980) – intentionally or unintentionally (by using “oakmoss” raw material that is often blended with the cheaper “treemoss” material) – had not been taken into account by Lepoittevin et al. (2000). In principle, highly purified patch test material should be used to standardize patch testing wherever possible – and necessary. The question remains: is pure “oakmoss” patch test material a necessity, in view of the largely combined clinical exposure to “oakmoss” and “treemoss”, or, conversely, is not “contaminated” patch test material even more adequate to sensitively diagnose relevant sensitization?

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Dahlquist I, Fregert S: Contact allergy to atranorin in lichens and perfumes. *Contact Dermatitis* 2:111–119, 1980

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Reply

To the Editor:

We read with interest the letter from Uter et al. (2001) on the concordance between “oakmoss” and colophony in clinical patch testing.

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The aim of our paper (Lepoittevin et al. 2000) was to see if patients with a well-established allergy to colophony could react when tested with usual concentrations of “oakmoss” due to the presence of resin acids and their oxidation products. The 17 patients included in our study were therefore selected on the base of their known past and relevant allergy to colophony. The aim of our study was never to evaluate the percentage of concordance between oakmoss and colophony on a large population but to draw attention to a possible misdiagnosis due to the presence of impurities in patch test material.
In that respect, it is interesting to note in the letter from Uter et al. (2001) that the percentage of colophony sensitive patients reacting to oakmoss is increasing with regard to the severity of their allergy. Thus the percentage of patients reacting to oakmoss is 14.7% in patients reacting to colophony with erythema only ("?"), 19.4% in those with a "+" reaction, 30% in those with a "++" reaction, and 53.3% in those with very strong "++++" reactions. This later figure is very similar to the one we observed (53%) on our selected patients.

We suggest that more care should be taken when stating that 12823 patients were patch tested between 1992 and 1999 to the same oakmoss material as the one we have been using in our study. Over a period of time patch test suppliers will use different batches of oakmoss material either from the same supplier or from different suppliers. The oak moss sample we have been using is identical to the material used by Trolab (Reinbek, Germany) from 1999 to now. Therefore a comparison of data can only be valid if conducted in the period 1999–2000.

We are of course well aware that oakmoss and treemoss are skin sensitizers, not only because of the presence of resin acids but also because of the presence of other sensitizers, some of which are known in the literature (Dahlquist et al., 1980). Among our 17 patients two reacted to the oakmoss from Chemotechnique (Malmö, Sweden), despite a low content of resin acid, which probably indicates a true co-sensitization to oakmoss and colophony.

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Staphylococcal Colonization in Atopic Dermatitis Treatment with Topical Tacrolimus (Fk506)

To the Editor:

Tacrolimus (FK506) is a potent immunosuppressive macrolide. Clinical trials have demonstrated that it is an effective treatment for atopic dermatitis (AD) in adults as well as in children (Kuzicka et al., 1997; Boguniewicz et al., 1998). Experience from these trials suggests that an ephemeral burning sensation is the most common drug-related side-effect; however, skin infections are a potential complication of local treatment with topical immunosuppressive agents, and a recent open-label multicenter study, involving 316 AD patients treated with 0.1% tacrolimus ointment for 6–12 months, observed skin infections at the application site in 19.8% of patients (Reitamo et al., 2000). Heavy skin colonization with Staphylococcus aureus is well established in patients with AD, even in the absence of clinical signs of skin infection, and also on normal skin (Hauer et al., 1985; Lever et al., 1988).

As tacrolimus has no antistaphylococcal activity in vitro (Kino et al., 1987), topical treatment with FK-506 might enhance S. aureus colonization by a local immunosuppressive mechanism. Therefore, we conducted a pilot study in order to determine the influence of treatment with 0.1% tacrolimus ointment on S. aureus colonization. Tacrolimus ointment 0.1% was formulated according to Aoyama et al. (1995).

In 11 patients (mean age 23.2 [SD 13.8]) diagnosed with AD according to the criteria of Hannifin and Rajka (1980), we identified 40 lesional skin sites positive for S. aureus colonization. All patients had stopped systemic or topical antibiotic treatments at least 2 wk before onset of treatment with 0.1% tacrolimus ointment; the use of emollients was allowed throughout the study period. Staphylococcus aureus colonization density was measured as the number of agglutination-positive colony forming units (CFU per cm²) (Pastorex Staph-plus, Sanofi Pasteur, Marnes La Coquette, France), sampled with a manniitol salt agar contact plate (Ecobion, Carouge, Switzerland). Assessment of S. aureus colonization density at each site was done at baseline (day 0), and scheduled on days 3, 7, 14, and 21 after the onset of 0.1% tacrolimus ointment monotherapy. In total, 151 samples were realized, which represents 75.5% of the scheduled number (n = 200). Of these, 139 samples (92.1%) could be evaluated; 7.9% of the realized samples could not be processed because of technical problems. We also studied 11 S. aureus positive lesional skin sites in 11 patients (mean age 27.3 [SD 9.5]) that were treated with the vehicle alone. In order to correlate S. aureus colonization density at each site with parameters of treatment efficacy, we performed clinical grading based on the lesional score of the SCORAD index (Consensus report ETFAD), and assessed transepidermal water loss (TEWL), a parameter of skin barrier function (EP2 evaporimeter, ServoMed AB, Kinna, Sweden). Statistical comparison was made using the Wilcoxon signed-rank test, a nonparametric test; rank correlation analysis was made using the Spearman test.

During treatment with 0.1% tacrolimus ointment, TEWL and lesional score showed a significant decrease already after the third day of therapy (p < 0.03 and p < 0.001, respectively), whereas decrease of S. aureus colonization became significant at treatment day 7 (p < 0.003) (Fig 1). Statistical analysis according to the Spearman test showed no correlation between the three parameters (score, TEWL, and S. aureus colonization) studied at days 0, 3, 7, 14, and 21. In 31 samples, significant but transient increases of S. aureus CFU counts, as compared with preceding levels at the same skin site, were observed at some point during the 21-d treatment period (p < 0.05), without simultaneous changes of the clinical score and TEWL.

Our results demonstrate that topical immunosuppressive therapy of AD with 0.1% tacrolimus ointment during 3 wk is associated with an overall decrease of S. aureus colonization on lesional skin. Similar results have been reported with local steroid monotherapy, which has also been shown to reduce S. aureus colonization on AD skin (Nilsson et al., 1992). These findings are consistent with the concept of inflammatory skin condition in AD, being itself a predisposing factor for colonization with S. aureus. This hypothesis has some limitation insofar as the day-to-day variation of S. aureus colonization in untreated skin of patients with AD is not known. As tacrolimus does not have a direct antistaphylococcal activity (Kino

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