

Allergic contact dermatitis caused by 4-*n*-butylresorcinol present in a night cream for skin hyperpigmentation

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4-*n*-Butylresorcinol (CAS no. 18979-61-8) is an antioxidant used as a skin depigmentation agent in a variety of cosmetics.¹ We describe the first case of contact dermatitis to 4-*n*-butylresorcinol.

CASE REPORT

A 50-year-old non-atopic woman presented to our dermatology department in May 2018 with severe recurrent eczema on the face, neck, and chest for 6 months. She already used strong topical corticoids without improvement. She was convinced that the eczema was elicited by her new Eucerin Even Brighter Night Cream (Beiersdorf, Hamburg, Germany). In the past (15 years ago) she developed contact

dermatitis following the use of hair dyeing products and patch tests at that time were positive for nickel and *p*-phenylenediamine (PPD).

Patch tests were performed with the extended European baseline series (without PPD), a pharmaceutical series, a cosmetic series, a hairdressers series, a textile series, and the patient's own cosmetics (day cream, night cream, makeup) tested "as is." Test preparations (Chemotechnique Diagnostics, Vellinge, Sweden) were applied on IQ Ultra Chambers (Chemotechnique Diagnostics) and covered with Hypafix (BSN Medical, Hamburg, Germany). Readings were performed on day (D) 2 and D4, according to ESCD guidelines.² On D4, positive reactions were observed to potassium dichromate 0.5% pet. (+++), nickel sulfate 5% pet. (+++), textile dye mix 6.6% pet. (+++), toluene-2,5-diamine sulfate 1% pet. (++), *m*-aminophenol 1% pet. (+), 4-amino-azobenzene 0.25% pet. (+++), Disperse Orange 3 1% pet. (+++), and Eucerin Even Brighter Night Cream (++).

Subsequently, patch tests were performed with the 27 separate ingredients of the Eucerin Even Brighter Night Cream. There was a positive reaction on D2 and D4 to 4-*n*-butylresorcinol 0.5% pet. (++) (Figure 1).

The patient was advised to avoid contact with products containing 4-butylresorcinol. Furthermore, we advised to avoid contact with the other allergens (nickel, dichromate, PPD and derivatives). The eczema disappeared subsequently.

DISCUSSION

4-*n*-Butylresorcinol (synonym 1,3-dihydroxy-4-*N* butyl benzene; rucinol; CAS no. 18979-61-8) is a derivative of resorcinol. By inhibiting human tyrosinase, it reduces melanin production and hyperpigmentation. It is important to realize its sensitizing potential because of its use in cosmetics. As far as we know, there is no cross-reaction between 4-butylresorcinol and the other contact allergens of this patient. We found no



FIGURE 1 Positive patch test reaction (++) to 4-*n*-butylresorcinol

cross-reaction with resorcinol either. This case emphasizes the importance of patch testing with patient's own products, in order to identify new culprit allergens not yet present in commercially available patch test series.

CONFLICT OF INTEREST

The authors have no conflicts of interest to report.

AUTHOR CONTRIBUTIONS

Hilde Lapeere: Conceptualization; investigation; supervision; writing-review and editing. **Eline De Keyser:** Data curation; writing-original draft.

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