

## CONTACT POINT

# A new case of contact dermatitis to bakuchiol in a cosmetic cream

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**KEYWORDS:** allergic contact dermatitis, bakuchiol, cosmetics, patch tests, ROAT**CASE REPORT**

A 23-year-old female with a background of seasonal rhinoconjunctivitis and aquagenic urticaria was referred for investigation of recurrent facial eczema. She reported repeated flares of erythematous and edematous itchy lesions strictly localized on her face and more specifically on the eyelids after applying the anti-age eye cream DermAbsolu Soir regard jeunesse (Laboratoires Dermatologiques AVÈNE, Paris, France).

Patch tests were performed on the upper back, using IQ Ultra patch test chambers (Chemotechnique Diagnostics, Vellinge, Sweden) occluded for 2 days with Oper tape (Iberhospitex, Innovative Health Technologies, Barcelona, Spain); the European baseline series was tested along with additional tests suggested by the REVIDAL group, a cosmetic series (Chemotechnique Diagnostics), and the suspected cream "as is." Tests were read on day (D) 2 and D4 according to criteria of the International Contact Dermatitis Research Group. All patch tests were negative but a repeated open application test (ROAT) with the eye cream was positive on D1 with a follicular pattern (Figure 1).

In a second step, all ingredients of this cream, kindly provided by the manufacturer, were tested. The patch test with bakuchiol 1% pet., which corresponds to its concentration in the final product, was the only positive test result (++ on D2 and D4). The patient was also tested with bakuchiol 0.1% pet. with positive results (+ on D2, ++ on D4; Figure 2). Five controls were tested with bakuchiol 1% pet. with a negative result for all of them. Accordingly, the patient was advised to avoid products containing this component.

**DISCUSSION**

Bakuchiol (INCI) is a phytochemical product extracted from *Psoralea corylifolia* seeds. *P. corylifolia* (Babchi) is a leguminous plant used in

Ayurveda and Chinese traditional medicine, the extracts of which contain numerous phytochemicals, including flavonoids, coumarins, and meroterpenes (bakuchiol and 3-hydroxybakuchiol).<sup>1</sup> Bakuchiol is used in cosmetic creams as an emollient, anti-oxidant, skin conditioning, and anti-microbial agent. It allegedly regulates seborrhea and has anti-acne properties.<sup>2</sup> In addition, it has been found to have retinol-like



**FIGURE 1** Follicular inflammatory pattern of the repeated open application test with the cream on day 1



**FIGURE 2** Positive patch test (++) with bakuchiol 0.1% pet. on day 4

effects *in vitro*, stimulating collagen synthesis in mature fibroblasts and upregulating genes involved in extracellular matrix and dermoepidermal junction maintenance.<sup>3</sup> *In vivo*, it may reduce wrinkles and hyperpigmentation without the irritating effects of retinol.

Accordingly, bakuchiol is often presented as a “natural” alternative to retinol, being more photostable and less irritant than the latter molecule, and is widely used in anti-acne and anti-aging cosmetics.

A first case of allergic contact dermatitis to bakuchiol has been recently reported in a 33-year-old woman.<sup>4</sup> Bakuchiol was present in the cosmetic Noreva Exfoliac Global 6 (Noreva Laboratoires, Paris, France). Patch tests were positive for the suspected cream and with bakuchiol 0.1% pet., whereas 10 control patients also tested with this ingredient showed negative results. Finally, our case further illustrates the usefulness of a ROAT when a patch test with a suspected cosmetic remains negative.

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## CONFLICT OF INTEREST

None to declare.

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