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Allergic contact dermatitis caused by *Magnolia officinalis* bark extract in a facial anti-ageing cream

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Key words: allergic contact dermatitis; anti-ageing cream; cosmetics; facial dermatitis; *Magnolia officinalis* bark extract.

Facial contact dermatitis may be caused by ingredients of skin care products such as fragrances, preservatives, and emulsifiers. We report the first case of allergic contact dermatitis caused by *Magnolia officinalis* bark extract contained in a facial anti-ageing cream.

Case Report

A 63-year-old woman presented with acute vesicular, oedematous and pruritic dermatitis of the face a few days after applying a new 'anti-ageing' day care cream on her face. She had used a similar cream for night care a few months earlier, but had stopped using it after 3 months because of redness and itching. Both products contained the same key ingredient, *M. officinalis* bark extract.

After resolution of the dermatitis, patch tests were carried out, according to international guidelines (1), with the European baseline series, a cosmetic series, and the patient's own cosmetic products. The only positive result was with a facial anti-ageing cream, Eucerin™ Volume-Filler Day Care Dry Skin, tested 'as is': ++ at D2 and D3. Subsequently, we performed a repeated open application test with the suspected cream (twice daily, 5 × 5-cm applications) on the volar aspect of the forearm; this was strongly positive at D3.

Further patch testing was conducted with ingredients of the cream provided by the cosmetic supplier. The patient reacted to *M. officinalis* bark extract 0.5% pet. (+ at D2 and ++ at D3) (Fig. 1). Other cosmetic ingredients gave negative results. Patch tests with *M. officinalis* bark

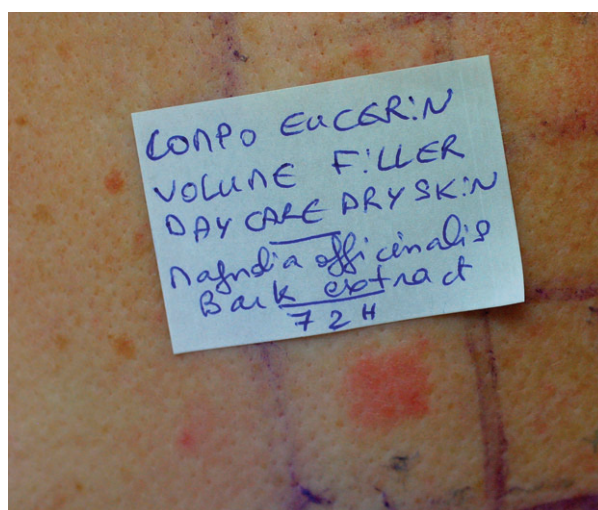


Fig. 1. Positive patch test reaction to *Magnolia officinalis* bark extract at D3.

extract 0.5% pet. in 10 control subjects all gave negative results.

Discussion

M. officinalis is a species of the Magnoliaceae family that is native to the mountains and valleys of China. Magnolia bark is the dried stem, root or branch bark of *M. officinalis*. It has been used for centuries in traditional Asian medicine for the treatment of anxiety, sleeping disorders, and allergic diseases (2, 3). Its main active ingredients are magnolol and honokiol, two polyphenolic compounds. In recent studies, various beneficial pharmacological properties have been found *in vitro* and in preclinical models, in particular against cancer (4). Antimicrobial

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properties have also been shown (5). Various magnolia bark-derived extracts can also be found in dietary supplements. The extract has been proposed to be added to chewing gum and mints for its breath-freshening effect (6). *M. officinalis* bark extract has been used as a cosmetic ingredient for some years. In CosIng, the European Commission database with information on cosmetic substances, it is mentioned as having antimicrobial and skin-conditioning functions (7). In the cosmetics

industry, *M. officinalis* bark extract is also used as a so-called active due to its claimed synergistic inhibition of activation of nuclear factor- κ B, a key mediator in both inflammatory and ageing processes, by magnolol and hokoniol. The compound is recommended at 0.1–0.5% in 'anti-ageing' cosmetic products for the face, 'protective formulas', and 'anti-redness skin care' products (8). To our knowledge, this is the first case of allergic contact dermatitis caused by *M. officinalis* bark extract.

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