

Photoallergic contact dermatitis from the sunscreen octyl triazone

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In January 2000, the British Photodermatology Group in conjunction with the British Contact Dermatitis Group started an investigation into topical sunscreens. In addition to already known photo-sensitizers, consecutive patients attending for photopatch testing were tested to a series of newer sunscreens (Hermal Kurt Hermann, Hamburg, Germany). We report the first case of a positive photopatch test to octyl triazone.

Case Report

A 66-year-old woman presented to the accident and emergency department with a 5D history of an erythematous bullous eruption over her

hands, arms and lower legs, which she had developed while on a holiday in Spain. A course of penicillin had not resulted in any improvement. She had been using a sunblock (Nivea® sun factor 24; Beiersdorf AG Hamburg, Germany). She had had a similar, but less severe, rash during her last holiday 5 years ago. She was not atopic and was on no regular medication. There were no known allergies. She was started on a reducing course of systemic prednisolone in conjunction with a cream containing betamethasone valerate and fusidic acid.

When her skin had settled and the course of corticosteroid been completed, she was patch tested to a standard and a face series, with the following positive reactions on D2 and D4: fragrance mix +++ and Myroxylon Pereirae +/+. These reactions were not thought to be currently relevant, as the patient had not been using any fragranced products. She was also photopatch tested according to protocol 3 of the British photodermatology group (1) and reacted +++ to butylmethoxydibenzoylmethane and -/+ to octyl triazone at the site irradiated with 5 J UVA. Both of these were contained in her sunscreen, and she also reacted -/+ to a sample of this. Unirradiated controls and the irradiated control were negative.

Discussion

Photoallergic dermatitis is due to a Type IV hypersensitivity to a photo-

activated chemical or a photoproduct which acts as a hapten or complete antigen. Exposure to ultraviolet light is necessary to induce and provoke the immune response (1). Ultraviolet absorbers in sunscreens are now the commonest cause of photoallergic reactions (2). The frequency of contact allergy to a given substance increases with the amount of exposure within a population (3), as has been seen with sunscreens. In particular, PABA and its esters such as octyl dimethyl PABA are known sensitizers (4). The use of benzophenones has therefore increased, and more positive photopatch tests to members of this group, such as benzophenone-3 and benzophenone-10, are now emerging (5, 6). Reactions to butyl methoxydibenzoylmethane have also been reported, but dibenzoylmethanes are not commonly used in England (7). Photoallergy is rare with the cinnamate in current use, octyl methoxycinnamate.

We report the first case of photocontact allergy to the UV absorber octyl triazone (2,4,6-trianilino-p-2-ethylhexyl-1-oxi-1,3,5-triazine). Octyl triazone has a molecular weight of 823 and is structurally unrelated to any of the aforementioned sunscreens (Fig. 1). It is a high UVB filter. A concentration of 5% is recommended for a high sun protection factor. Due to its polar nature, it has a good affinity with skin keratin. Octyl triazone is completely insoluble in water and stable toward light. Because of its low penetration into the

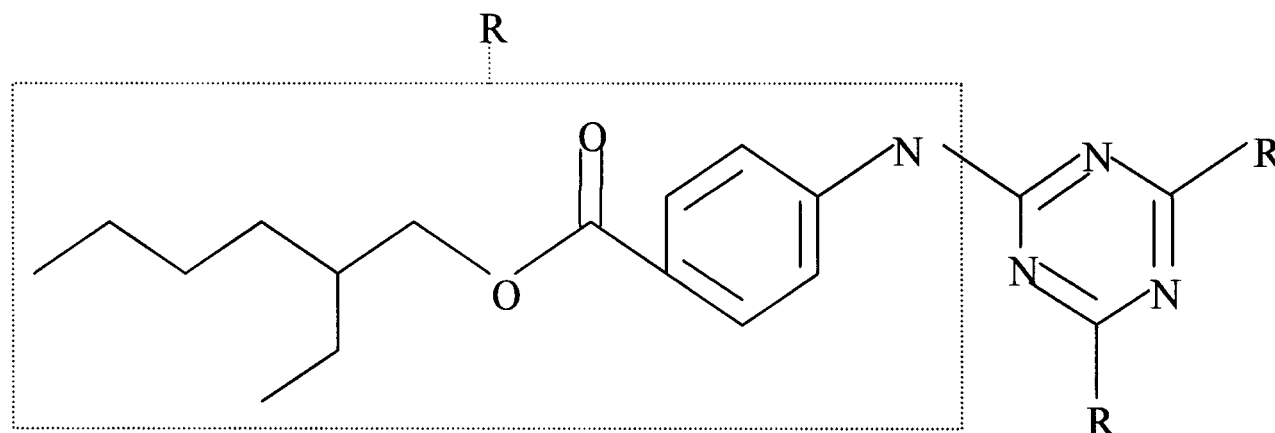


Fig. 1. Formula of octyl triazone.

skin, it is also used in day creams (8). A phototoxic reaction is not immunologically mediated and will occur in everybody, given sufficient exposure. Since January 2000, we have photopatch tested 120 patients, with only this patient having a positive reaction to octyl triazone, thus excluding a phototoxic reaction.

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