

Allergic contact dermatitis caused by Glycofilm® 1.5P contained in an anti-wrinkle cream

Caterina Foti, Paolo Romita, Stefania Guida, Annarita Antelmi and Domenico Bonamonte

Department of Biomedical Science and Human Oncology, Unit of Dermatology, University of Bari, Bari, 70124, Italy

doi:10.1111/cod.12085

Key words: allergic contact dermatitis; anti-wrinkles; biosaccharide gum-4; Glycofilm® 1.5P.

Case Report

A 78-year-old atopic woman presented with the appearance of eczematous lesions involving the face, neck, and trunk. Her history showed that the lesions developed 2 months after the daily application of an anti-wrinkle cream. She was treated with a daily application of topical corticosteroid (methylprednisolone aceponate) for 10 days, and at the same time she stopped applying the above-mentioned cream. One month after complete resolution of the dermatitis, she was patch tested with the Italian Society of Allergological, Occupational and Environmental Dermatology (SIDAPA) baseline series (Euromedical®, Calolziocorte, LC, Italy), with our cosmetics series, and with the anti-wrinkle cream 'as is'. Patch tests were applied on the back, and left occluded for 2 days with Finn Chambers® (diameter 8 mm; SmartPractice®, Phoenix, AZ, USA) on Scanpor® tape (Norgesplaster A/S, Vennesla, Norway). The test readings were performed on D2 and D4. The reactions were classified according to the International Contact Dermatitis Research Group guidelines. Readings showed positive reactions (++) to colophonium and to the anti-wrinkle cream 'as is'. Hence, we performed patch tests with the ingredients of the cream (Table 1), which were provided by the manufacturer. Patch tests gave positive reactions, at both D2 and D4, to Glycofilm® 1.5P (Solabia, Pantin, France) (Fig. 1), an aqueous solution containing biosaccharide gum-4 (CAS no. 283602-75-5), and phenoxyethanol. Ten healthy volunteers were patch tested with Glycofilm® 1.5P and with the anti-wrinkle cream 'as is', and the results were negative.

Table 1. Ingredients of the anti-wrinkle cream

	Ingredients
Carbomer	Sodium hyaluronate
Phenoxyethanol	Tocopheryl acetate
Disodium-EDTA	Water, <i>Avena sativa</i> kernel extract, and sodium benzoate
Water and methylisothiazolinone	Decarboxy carnosine-HCl
Glycerin	Water, glycerin, <i>Thermos thermophilus</i> ferment, phenoxyethanol, potassium sorbate, and sodium lauryl sulfate
Dimethicone	Water, pentylene glycol, and <i>Rhodiola rosea</i> root extract
Isononyl isononanoate	Butylene glycol, water, <i>Camellia sinensis</i> leaf extract, and phenoxyethanol
Cetearyl alcohol and cetearyl glucoside	Butylene glycol, water, and <i>Lapsana communis</i> flower/leaf/stem extract
Tocopherol and <i>Helianthus annuus</i> seed oil	Butylene glycol, water, and <i>Bocoa prouacensis</i> extract
Glyceryl stearate and polyethylene glycol 100 stearate	CI 15985/yellow 6
Dicaprylyl carbonate	Glycerin, water, and <i>Thymus citriodorus</i> flower/leaf extract/potassium sorbate
Sodium hydroxide	Glycerin, water, and <i>Musa sapientum</i> fruit extract
Modified corn starch and water	Diethylhexyl adipate, <i>Humulus lupulus</i> extract, linalool
Water, phenoxyethanol, biosaccharide gum-4	Parfum, linalool, and limonene

Discussion

We report the first case of allergic contact dermatitis (ACD) caused by Glycofilm® 1.5P (mean molecular weight of 2×10^6), an anionic polysaccharide that was recently obtained through biotechnological means from plant material. It is a branched desacetylated structure with

Correspondence: Caterina Foti, Department of Biomedical Science and Human Oncology, Unit of Dermatology, University of Bari, Policlinico, Piazza Giulio Cesare 11, Bari 70124, Italy. Tel: +39 080 5478107; Fax: +39 080 5478954. E-mail: caterina.foti@uniba.it



Fig. 1. Patch test reaction to Glycofilm® 1.5P.

a saccharide sequence comprising glucuronic acid, L-fucose, and D-glucose. Glycofilm® 1.5P is known as a well-tolerated compound, and is added to cosmetics, as an aqueous solution, for its hydrating and protective properties. In our case, we concluded that ACD was caused by biosaccharide gum-4, as phenoxyethanol, which is added as a preservative at 1.5%, gave a negative result when tested alone. The patient was also positive to colophonium, and this correlated with an old sensitization to dressings. We highlight the importance of testing the ingredients of topical products, in cooperation with manufacturers, as the increasing number of substances being obtained with molecular techniques may lead to new allergens causing ACD (1).

Reference

- 1 Mukherjee P K, Maity N, Nema N K, Sarkar B K. Bioactive compounds from natural resources against skin aging. *Phytomedicine* 2011; **19**: 64–73.