

RESEARCH LETTERS

Anaphylaxis associated with the ingestion of gold kiwifruit

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INTRODUCTION

Green Kiwifruit allergy has been widely described and the responsible allergens have been identified. However, no published data or studies have been reported with Gold Kiwifruit. The first case of sensitisation after the ingestion of green kiwifruit was described in 1981¹. Since that time, a variety of allergic reactions have been related to the ingestion of this fruit. The most common manifestations of allergy after ingestion of kiwifruit are the oral allergy syndrome (OAS) and urticaria². Gold Kiwifruit is a new kiwifruit, obtained after importing seeds from China, where a female plant, chosen for its yellow flesh and excellent flavour, was crossed with a male plant, proven to produce succulent fruit, with a different taste and less allergenicity. In 1992, one offspring plant from this family was selected and nurtured, resulting in the golden-fleshed kiwifruit now known as ZESPRI® Gold Kiwifruit.

METHODS

We present a 35 year-old woman who suffered oropharyngeal itching and generalised urticaria several minutes after the ingestion of Gold Kiwifruit, previously tolerated many times. The patient attended the Emergency Department of our hospital and reported severe pruritus in her palms and soles, the appearance of skin lesions (hives) in trunk and extremities and dyspnoea (she had never suffered from asthma before). Uvular oedema was observed after oropharyngeal exploration and hypotension was measured. She received antihistamines, systemic corticosteroids and volume to improve her general state, with the symptoms disappearing within 6 hours. After being discharged from the emergency room, the patient was sent to our Allergy Department, where she was studied.

RESULTS

Extracts from Green and Gold Kiwifruit were prepared by Laboratorios LETI S.L. (Tres Cantos, Madrid, Spain) following previously described methodology³. The protein content of the extracts was 53.8 µg of protein/mg of freeze-dried material for Gold Kiwifruit and 79.25 µg/mg for green kiwifruit. The protein profile of both extracts was performed by SDS-PAGE gel electrophoresis. Several bands in a molecular weight range from 8 to 45 kDa were visualised in the Gold Kiwifruit extract, with the most prominent bands being at 17 and 30 kDa approximately. The allergenic profile of the patient was analysed by immunoblot experiments. A band of 17 kDa was recognised in the Gold Kiwifruit extract by the serum patient (Fig. 1). Skin prick test

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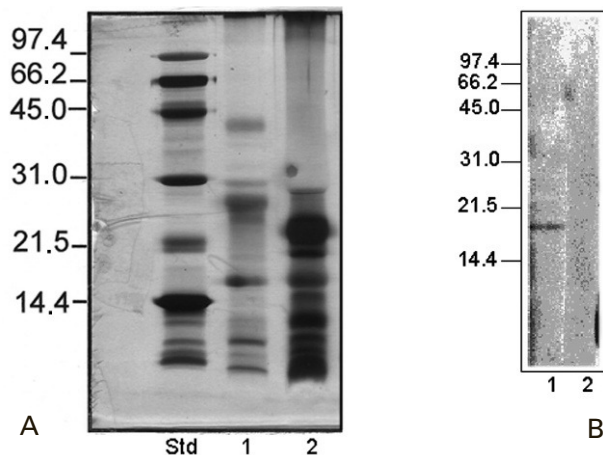


Figure 1.—A. SDS-PAGE (silver stain) of the kiwifruit extracts. Std: Standard Low molecular weight BioRad; Lane 1: Gold Kiwifruit extract (100 μ g); lane 2: kiwifruit extract (100 μ g). B. Immunoblot Chemiluminiscence of kiwifruit extracts. Lane 1: Gold Kiwifruit extract (100 μ g); lane 2: kiwifruit extract (100 μ g). Dilution of the serum 1:2.

(SPT) with commercial extract of green kiwifruit was positive (6 mm/ Histamine 5 mm). Prick by prick with the Gold Kiwifruit was positive (11 mm/ Histamine 5 mm). SPT with Gold Kiwifruit extract (5 mg/ml) showed a positive result (8 mm/Histamine 5 mm). No oral challenge was performed with green kiwifruit, or with Gold Kiwifruit. SPT with aeroallergens were positive for grass pollen, *Olea europea*, *Cupressus arizonica* and *Plantago lanceolata*. The patient, who works in a fruit stand, at a grocery shop, previously suffered from skin pruritus after touching peaches (Prick test with peach was negative), but no clinical manifestations were associated after eating this or other fruits, including the green kiwifruit. She suffers from rhinoconjunctivitis due to pollens every spring, and takes antihistamines regularly. Total serum IgE concentration was 140 KU/L and the analysis of specific IgE (ImmunoCAP; Phadia, Sweden) was 0.52 KU/L for green kiwifruit and 0.64 KU/L for Gold Kiwifruit. IgE against peach and profilin (Bet v 2) was negative (< 0.35 KU/L).

DISCUSSION

In summary, we report, to the best of our knowledge, the first case of Gold Kiwifruit allergy confirmed with positive in-vivo and in vitro test, which has proven the allergenicity of Gold Kiwifruit. No oral challenge was made with green nor with Gold Kiwifruit because of the severe reaction suffered by the patient. As already known⁴⁻⁵, a cross-reaction between both kiwifruits exists. This is a very important case for Allergologists, because of the attitude that must be taken in such cases. Many articles have been published previously talking about the allergenic proteins of green kiwifruit, but very few have been written about the Gold Kiwifruit. The producer of this new fruit has published information stating that this is the right kiwifruit to choose due to its taste and low allergenicity, but as we have proven, this allergenicity exists. In other cases published before with patients allergic to green kiwifruit who were challenged with Gold Kiwifruit, positive results were observed, so Gold Kiwifruit must be avoided by those suffering allergic reactions after eating green kiwifruit.

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