

Guinep fruit anaphylaxis: A case report

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Guinep (*Melicoccus bijuga*) is a tropical tree cultivated in the West Indies for its fruit. The fruit appears like bunches of large, green grapes. The ovoid fruit measures a little over 1 inch in length, but an occasional tree bears fruit twice this size. Inside the tight, thin skin, which is easily cracked by the teeth, lies a thin layer of sweet-tart, yellow pulp surrounding a large ovoid seed.

IgE-mediated allergic reactions to guinep have not yet been described. We report one patient with a history of guinep allergy confirmed by in vitro testing.

CASE HISTORY

A 63-year-old Jamaican-born female reported having diffuse hives associated with swelling of her eyes and shortness of breath within a few minutes after the ingestion of guinep fruit. She required treatment with benadryl in the emergency room. She has since avoided the ingestion of guinep fruit. The patient refused to be skin tested with guinep extract.

Abbreviation used

PBS-T: Phosphate-buffered saline/Tween 20

METHODS

IgE antibody to guinep fruit extract was detected by the ELISA technique.^{1,2} Guinep fruit was pureed with a mortar and pestle, and phosphate-buffered saline was added to make an extract. The extract was strained through a sieve to remove the pulp and seeds. The supernate was centrifuged at 2800 rpm for 15 minutes in an IEC Centra-7R refrigerated centrifuge (International Equipment Company). The protein content of the extract was determined by a modified micro Biuret method.³ Guinep extract was diluted in carbonate buffer (pH 9.6) to 200 µg/ml and used to coat the Immulon flat-bottom micro-ELISA plates (Griener & Sohne, Nürtingen, Germany). Guinep extract (200 µl per well) was incubated in the ELISA plates at 4° C for 18 hours. The plates were emptied and washed three times with phosphate-buffered saline/Tween-20 (PBS-T). The serum was diluted serially in PBS-T, and 200 µl per well of each dilution was added and incubated at 37° C for one hour. Then serum was removed, and the wells were washed three times. The following reagents were added to the wells in sequence with appropriate incubation and washes between each

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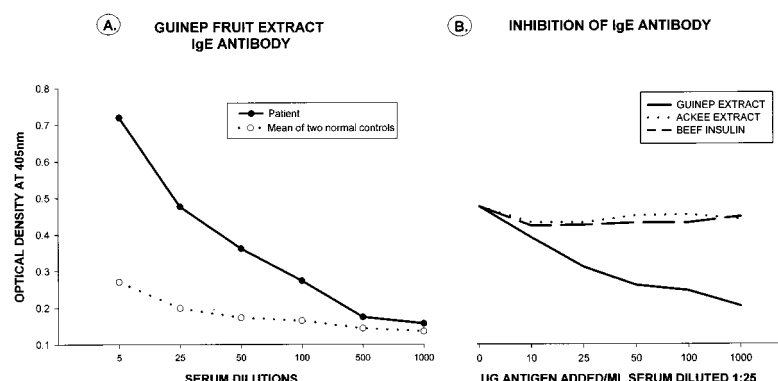


FIG. 1. A, IgE antibody titer to guinep fruit extract as determined by ELISA. B, Inhibition of IgE antibody by guinep fruit extract.

step: rabbit anti-human IgE (Accurate Chemicals, Westbury, N.Y.) diluted 1:5000 in PBS-T, goat anti-rabbit IgG, alkaline phosphatase conjugate (Sigma Chemicals, St. Louis, Mo.) diluted 1:10,000 in PBS-T, and enzyme substrate *p*-nitrophenyl phosphate (Sigma 104 phosphate) 1 mg/ml in 10% diethanolamine buffer (pH 9.8). The optical density of each well was read at 405 nm after 30 minutes at 37° C in a Biotek Model EL-312 automatic ELISA reader (Biotek, Inc., Winooski, Vt.).

Inhibition of IGE binding to guinep extract

The patient's serum was diluted 1:25 in PBS-T and incubated for 15 minutes at 37° C with either guinep fruit extract, ackee fruit extract, or bovine insulin at varying concentrations from 0 to 1000 µg/ml of diluted serum. The inhibition assay was carried out in the same ELISA plate and at the same time as the regular IgE antibody assay. The patient's IgE antibody was inhibited by guinep fruit extract, but not by ackee fruit extract or bovine insulin as shown in Fig. 1.

DISCUSSION

Tropical fruits, including ackee 4 and guinep, should be considered as a potential cause for allergic reactions. Carribean patients who have experienced allergic reactions after eating should specifically be questioned about tropical fruit ingestion before onset of the allergic reaction.

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