



Allergologia et immunopathologia

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RESEARCH LETTER

Food allergy to spinach in an infant

To the Editor,

Allergy to certain food in the early months of life, such as cow's milk proteins, eggs, fish or legumes, is widely documented and relatively frequent. However, in young children IgE-mediated allergy to other foods such as spinach is uncommon and scarcely published. The importance in the proof of this food allergy lies in the avoidance and cross-reactivity studies.

Spinach is the common name of the species *Spinacea oleracea*, *Spinacea* gender from the family *Chenopodiaceae*. This family also includes chard and beets, of the *Beta* genus, and some species whose pollens are well known to be allergenic, such as *Chenopodium album* and *Salsola kali*.

We report a case of a male patient aged 18 months who consulted for the eruption of a perioral rash and generalised urticarial reaction, no anaphylaxis, after the ingestion of different foodstuffs, including spinach, potato and chicken puree. Skin prick test was performed with positive results (> 3 mm over the negative control) with extracts from eggs, fish, lentils, chickpeas, carrots, spinach, chard, beet, and *Chenopodium album* pollen. Oral challenge tests to chicken and potatoes were performed, with negative results for both foods. Prick-by-prick test with raw and boiled spinach showed positive results. We determined the level of specific IgE by EAST (Enzyme AllergoSorbent Test) to extracts of spinach, chard, carrot, and pollens of *Chenopodium album* and *Salsola kali*, obtaining values below 0.35 kU/L, but higher than those obtained with a negative control serum (pool of sera from non-atopic subjects). The molecular mass of the IgE binding bands shown by means of SDS-PAGE immunoblotting assay was 63.5 kDa, 43.5 kDa and 39 kDa (Fig. 1. Lane 1)

We performed a SDS-PAGE immunoblotting inhibition assay using spinach extract in solid phase and chard, beet, and mushroom extracts as inhibitors. The extracts from chard and beet produced a total IgE binding inhibition whereas the mushroom extract produced no inhibition at all. Therefore, in the patient serum there are specific IgE that cross recognise proteins from the spinach, beets and chard extracts but none from the mushroom extract (Fig. 1).

Spinach allergy cases have been reported, both oral and inhalatory allergy,¹⁻⁵ but none of them on such a young patient as the one we described here. Furthermore, cases of cross-reactivity between foods with no taxonomi-

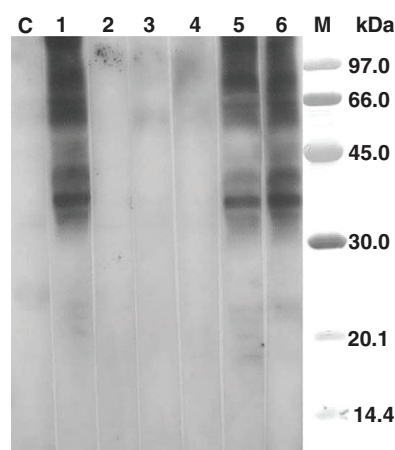


Figure 1 SDS-PAGE Immunoblotting inhibition. Spinach extract in solid phase. Lane 1: Patient serum; Lane 2: Patient serum previously incubated with spinach extract; Lane 3: Patient serum previously incubated with chard extract; Lane 4: Patient serum previously incubated with beet extract; Lane 5: Patient serum previously incubated with mushroom extract; Lane 6: Patient serum previously incubated with lamb extract M: Molecular mass marker.

cal relationship, such as spinach and mushrooms⁶ have been reported, as well as some new panallergen in food such as spinach, mushrooms and moulds.⁷ Our patient presents sensitivity to different foods, some of them from the same botanical family as spinach (beet and chard), but not against moulds or mushrooms. He also showed sensitivity against *Chenopodium album* pollen. Before the allergic reaction occurred, our patient had occasionally eaten spinach and chard, but not beet.

In summary, we present a documented case of food allergy to spinach in an infant patient, which is highly unusual. We also demonstrated cross-reactivity with other types of food and of species from the same family.

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