# Poster Session 36

# New insights into food allergy

## 993
### Food allergy: the molecular and clinical analysis of soybean

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**Background:** There have not been done any studies to evaluate the impact of GMO on human health in Lithuania yet. The aim of our investigation was to evaluate the gauge of soybean allergy in Lithuania, through molecular methods to estimate the pervasion of GM forms and most frequent types of modifications between soy and also to evaluate possible impact of GM soy to allergies.
**Methods:** Biotechnological methods: PCR, electrophoresis and real-time PCR was used to find allergenic food products that were GM as well and types of modifications that had been done to them. Clinical methods such as skin-prick testing were used to evaluate allergies.
**Result:** Through biotechnological methods such as PCR and electrophoresis there were determined if products, used in our project, were pure, without any intermixture of others products. By using Real - time PCR we found out if our product were genetically modified or not. In our case there were two main modifications 35S promoter and NosT terminator that were traced in soybeans, which were used for further testing. From this soy we had obtained 20% hydrolizates that have been used to perform skin-prick tests on patients who are allergic to wild-type soy. By doing this clinical testing we were trying to find out if GM products may elicit stronger allergic reaction and increase allergenicity compared to wild-type products, in our case soybean. We performed skin prick tests with on 20 patients allergic to soy with wild-type and GM soy, to demonstrate the potential influence of GMO.
**Conclusion:** Our data showed that soy is one of the most popular food allergen among Lithuanians. Most common GM among soy was 35S promoter and NosT terminator. There were no significant differences between GM and wild-type soybean allergens of skin-prick testing to patients that are allergic to soybean and its products and also to people that have no any allergic response to wild-type.

## 994
### Potential underestimation of risks in hazelnuts-allergic patients: a peculiar case report

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We report the case of a 19-year-old girl with severe adverse reactions to hazelnuts since she was a child. Over her life, she experienced several episodes of severe angioedema and urticaria after intake of even tiny amounts of hazelnuts; in some of these occasions she needed ER treatment but symptoms always subsided without the need of epinephrine injection. Anamnesis revealed no history of atopic dermatitis, respiratory allergy, other food or drug adverse reactions.

"Classic" allergologic work-up confirmed isolated sensitization to hazelnuts extract, either through prick testing (+++) and ImmunoCAP (2.7 KUA/l). Total IgE were 37 KU/l and no other sensitization was found on a wide panel of inhalant and food allergens, including Corylacee pollens, either with prick testing and ImmunoCAP. To better identify our patient's risk of future severe adverse reactions upon accidental ingestion of hazelnuts, we performed a component resolved diagnostic (CRD) evaluation.

Search for specific IgE to food allergenic molecules was performed with an allergen microarray test (ImmuoCAP ISAC), which comprehends several hazelnuts-specific allergenic molecules (Cor a 1: PR-10; Cor a 8: LTP; Cor a 9:11S globulin) as well as a wide panel of cross-reactive molecules, including Bet v 2 (profiline, homologue to Cor a 2), Ara h 1 (7S vicilin homologue to Cor a 11), CCD; and the ISAC test turned out – unexpectedly – completely negative. Absence of serum specific IgE for Cor a 1, Cor a 8 and of all the available cross-reactive molecules was subsequently confirmed with a "classic" ImmunoCAP test. Patient serum was also tested with an experimental hazelnuts storage protein preparation (provided by Phadia, Uppsala, Sweden), which demonstrated the presence of serum specific IgE at a concentration of 2.2 KUA/l. The specific target of this reaction has not been identified yet.

In our patient, we diagnosed severe allergic reactions to hazelnuts, without demonstration of sensitization for commercially-available hazelnut allergenic molecules or cross-reactive molecules. The hazelnuts-derived molecular target of our patient's IgE should be considered a marker of potential anaphylactic reactions. Until it has not been identified and cannot be used in routine diagnostic tests, potential underestimation of risks must be taken into account in hazelnuts-allergic patients undergoing CRD.

## 995
### Assesment of allergenicity of apple cultivars

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**Background:** The aim of our study was to verify the amount of main apple allergen Mal d 1 in selected apple cultivars and find out the cultivars of the highest and the lowest allergenicity.
**Method:** Using 17 selected apple cultivars, the allergenicity was studied in 28 birch allergic patients with oral allergy syndrome to apple and with the sensibilization to the main apple allergen Mal d 1. Ten atopic persons with no history of food allergy and with negative skin prick test to apple were selected as a control group. We performed prick to prick tests with all selected apple cultivars in these patients. Pressed apple juice of particular cultivars was used for stimulation of basophils in the basophil activation test (BAT). BAT was performed by using combination CD 203c/CD63 expression by flow cytometer Beckmann-Coulter in all patients. ROC analysis was performed to calculate the optimal cut-off value of activated basophils with the apple juice. Intensity of patients reaction to single cultivars was confirmed by SDS-PAGE electrophoresis. We determined reactivity of the sensitized patients serum by Western blot method (WB).