

Research program IZS VE 11/15

Development of screening and confirmatory methods for multi-allergen detection in food by means of high resolution mass spectrometry

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Food allergy is a public health problem reported to be on the rise especially in industrialized countries. The lethal risk associated with food allergies have led the regulatory bodies to issue legislation concerning the labelling of the principal food allergens. In the European Union, Directive 2007/68/EC regulates the labelling of 14 allergenic ingredients that must be indicated on the respective food label whenever used.

Different analytical methods have been proposed to support allergen control. So far, immunoassays have been widely employed due to the ease in use, the relatively high throughputs and the low detection limits. On the other hand, other analytical methods might be required for confirmation of the results, subsequently to technical developments and the more and more widely shared necessity to employ instrumental techniques for confirmatory purposes.

The purpose of this project is the development of analytical methods for the simultaneous detection of multiple food allergens (e.g. milk casein or lactoglobulin, egg-white lysozyme or ovalbumin, wheat gliadin or glutenin etc..) using the potential of high resolution mass spectrometry (HRMS) coupled to HPLC, to complement the already established ELISA technique both for a screening and confirmatory purposes.