

Research revisiting the safety of GM weevil-resistant peas in mice contradicts previous risk assessment findings

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(Phys.org)—Researchers at the Medical University of Vienna have conducted feeding trials with mice to investigate the allergenicity of genetically modified (GM) weevil-resistant peas. Development of the peas was discontinued in 2005 when a risk assessment conducted by the CSIRO and Australian National University showed negative reactions in mice to the peas (Prescott et al 2005).

Field peas are an important rotation crop, which can be devastated by

pea [weevil](#) (*Bruchus pisorum*) infestation. Unlike peas, beans are not attacked by pea weevils as they contain a protein called α -amylase inhibitor (α AI) that causes the weevils feeding on beans to starve before they cause any damage. The team of Medical University of Vienna investigated immune responses in [mice](#) fed several varieties of beans, non-transgenic peas and the transgenic peas, expressing the bean or the transgenic versions of the α -amylase inhibitor. The mice showed similar levels of immune response no matter which food they consumed. Dr. Michelle Epstein, the lead researcher said, "We observed that the [immune response](#) in mice was the same no matter whether the inhibitor came from beans, where it naturally occurs, or from peas [genetically modified](#) to express the inhibitor and even in non-transgenic peas." "These results demonstrate that α AI transgenic peas are no more allergenic than beans or non-transgenic peas in mice" Dr. Epstein added.

The Prescott study is regularly cited by those on both sides of the GM debate as an example of either the inherent dangers of genetically modified foods or the effectiveness of pre-market studies in identifying potential [risk factors](#). [Rodent](#) studies for genetically modified organism (GMO) safety have recently been in the news. Seralini et al. showed untoward effects in rats fed GM corn but these studies were fraught with problems and add to the controversy of using rodents to study GMO safety (see EFSA report). "The study is important because it illustrates the significance of repeating experiments in independent laboratories" Dr. Epstein said. "It is also vital that investigators are aware of potential unexpected crossreactive allergic responses upon the consumption of plant products, as we found in the non-transgenic peas".

Dr. Epstein questions the utility of rodents for evaluating biotech crops and points out that the MUV results highlight the importance of a careful case-by-case evaluation of GM crops, and the role science can play in decision-making around the introduction of GMOs into the food system. This research was conducted at the Medical University of Vienna

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More information: *PLOS ONE*:
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