Allergenicity assessment strategy for novel food proteins and protein sources

Kitty Verhoeckx¹, Henrike Broekman², André Knulst², Geert Houben¹

¹The Netherlands Organization for Applied Scientific Research (TNO), Zeist, the Netherlands; ²UMC Utrecht, the Netherlands

**Aim:** Development of an allergenicity assessment strategy for novel proteins and protein sources.

**Methods:** Previously published literature on allergenicity risk assessment, EFSA opinions on novel foods and the use of the “weight-of-evidence approach” for food derived from GM plants were consulted.

**Results:** A new conceptual strategy is developed for assessing the allergenicity of novel proteins (Figure 1).

**Discussion:** Allergenicity risk assessment might pose some major difficulties in case of approval of novel foods on the food market, since detailed guidance on how to assess the allergenic potential of novel foods is not available. At present, the approach relies mostly on the guidance of allergenicity assessment for genetically modified (GM) plant foods. However this guidance is difficult to interpret, not completely applicable or validated for novel foods and therefore needs some adjustments. The allergenicity assessment strategy must address cross reactivity with known allergens and sensitising potency of the novel protein.

**Conclusion:** The proposed strategy gives more guidance on how to assess the allergenicity of novel food proteins and protein sources, as was previously shown for mealworm proteins (Broekman et al).

**Figure 1:** Schematic overview of a new allergenicity assessment strategy of novel proteins and protein containing sources (Verhoeckx et al).

**References:**