

Testbiotech comment on EFSA Scientific Opinion on the application (EFSA GMO-NL-2010-78) for the placing on the market of herbicide tolerant genetically modified soybean MON 87705 for food and feed uses, import and processing

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Testbiotech comment on EFSA Scientific Opinion on the application (EFSA GMO-NL-2010-78) for the placing on the market of herbicide tolerant genetically modified soybean with increased content in oleic acid MON 87705 for food and feed uses, import and processing under Regulation (EC) No 1829/2003 from Monsanto.

This is a comment concerning a genetically engineered, herbicide-tolerant (glyphosate) soybean with an increased content in oleic acid for food and feed uses, import and processing.

Molecular data

The expression of the gene construct and the functional stability of the gene construct were, for example, not tested under extreme climate conditions such as drought and flooding which are likely to occur under present ongoing climate change. Investigations under controlled environmental conditions including various biotic and abiotic stressors should have been performed to determine the actual range of variation and to identify relevant impact factors. Further, the effects of the additional genes on the activity of the plants' genome and the plants' metabolism were not investigated by using methods such as metabolic profiling.

The genetic modification to change the oil composition in the soybean is based on an inhibition of the expression of endogenous plants genes by RNAi interference (RNAi), resulting in reduced levels of the corresponding plant enzymes. The underlying molecular process is complex and encompasses the degradation of endogenous mRNAs. In this process, small interference RNA molecules might be produced such as secondary (double stranded) dsRNAs, which can be biologically relevant to human health and the environment. (Short inhibitory) siRNA molecules may both cause intended gene silencing and have off-target effects, i.e. may silence genes other than those intended (Senthil-Kumar et al., 2011). These effects can be passed from the plant to human or animal at the consumption stage. Potential biological effects will depend on similarities between the cell regulation in mammals and plants. These biological effects based on these similarities are shown by Zhang, et al., 2011. Thus, for the risk assessment of plants that produce new dsRNA, it is necessary to conduct bioinformatics studies to identify any likely unintended targets of the intended siRNAs in humans or animals. But no such studies were conducted.

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File attachments: Attachment



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