



Letter to the editor

Response to The Letter to Editor on “The Weight of The Evidence: Eating Food Plants and Food RNA Is Not Detrimental to Health. Journal of Food Quality and Hazards Control. 1: 126-127”

Dear Editor

The first point that I would like to emphasize is that my previous editorial was just to put forward this hypothesis that based on the limited available works, genetically modified foods may be of any adverse health consequences as well (Salehi, 2014). On the basis of studies that demonstrated the possibility of miRNAs absorption through the consumers' digestive system, and probability of dysregulation of miRNAs profile in genetically modified foods, it is worth to open up a discussion venue on this topic.

Chen et al. (2013) and Zhang et al. (2012) specified in their reply to Dickinson et al. (2013) a few important technical points. First, sequencing platform used in their study was inefficient to measure plant miRNAs, because some miRNAs in rice was estimated less than what reported previously (Yi et al., 2013; Zhu et al., 2008). Therefore, we can assume that failing to detect rice miRNAs in mouse liver and plasma may be a technical challenge. In addition, some other methods used in Dickinson et al. (2013) study had technical problems (Chen et al., 2013).

Another discussable issue is the stability and conservation of plant miRNAs in digestive system. In Zhang et al. (2012) study, total RNA isolated from rice or mouse liver was adjusted to pH 2 and kept at 37 °C for several hours. Zhang et al. (2012) suggested that methylation (2'-O-methylated 3' ends) had a protective effect on the stability of plant miRNAs (Zhang et al., 2012). Moreover, about stability of miRNAs in the digestive tract, we can consider the uptake of breast milk miRNAs by newborns digestive system. It is clearly demonstrated that miRNAs in human breast milk are resistant to several freeze-thaw cycles. Moreover, they are stable when the milk was treated for 1 h in an acidic (pH 1) solution (Kosaka et al., 2010). Based on Dr. Witwer, there is no health risk in safe plant consumption, yet. This could be due to the relationship between evolutionary paths of plants and animals. According to our hypothesis, it is possible that genetically modified foods through the creation of new

miRNAs profile will have a negative impact on human gene expression in the future.

References

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Dr. R. Salehi

Department of Genetics and Molecular Biology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran

E-mail: r_salehi@med.mui.ac.ir