



## Mycotoxins: An Open Challenge for Food Safety

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### Editorial

It is a pleasure to welcome with this editorial for the launched inaugural issue of Toxicology: open access, a new peer reviewed scientific publication which aims to give the scientific community the opportunity to disseminate the results of their research by offering a panoramic view of novel trends and perspectives. This Editorial gives to me the opportunity to outline the relevance of secondary metabolites produced from some micro fungi. One of the major risks associated with food and toxicology is represented in fact by mycotoxins. They affect global agriculture in such a wide way that they can be considered ubiquitous at some concentration in the average human diet. Studies of their in vitro and in vivo toxicity are discussed, leading to investigations of co-exposed mycotoxins, as well as their possible synergic effects. Mycotoxins are toxic secondary metabolites produced from micro fungi [1]. They represent a major risk for consumers not only related to toxicological aspects, but also to their frequency and concentration in primary and processed food. Some of the most common and toxicologically significant mycotoxins, e.g. aflatoxins, ochratoxins, fumonisins, deoxynivalenol, T-2 toxin, HT-2 toxin, patulin, zearalenone, and some ergot alkaloids are studied and their presence if food assessed. The wide variety of pathogenic mechanisms which these compounds use are capable of inducing a complex set of interactions [2,3].

The risk assessment and evaluation of mycotoxins which are possible contaminants of grains but also of other commodities and food from primary production, is relevant to properly communicate the risk associated to these compounds and the impact on consumers and on the other players in the food chain area. This aspect is considered crucial in both risk communication and management for the possible exposure to mycotoxins, and it should be also considered by decision makers as relevant in setting up appropriate actions to minimize the risk on field and up to the consumer of food and

processed foodstuff. There is consequently the need of better and finer resolution analytical approach to assess the quantities of these compounds in complex food matrices and processed foodstuff [4]. Their resistance to technological processes, to chemical and physical methods for cleaning up, their frequency and onset on different types of foods allow these compounds to be considered among most trouble makers in food chain and, at the same time, among the most neglected from a regulatory point of view. An example can be the mycotoxins present in food in minor extent, the so called emerging mycotoxins e.g. fusaproliferin, whose biological impact on health has been recently given attention [5] while other minor compounds still need extensive in vitro and in vivo experiments for proper risk assessment and quantification for possible health impact and health conditions onset on consumers.

### References

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