

10th International Conference on
Food Science & Technology

February 07, 2022 | Webinar



Magda Carvajal-Moreno

Ciudad Universitaria, USA

Aflatoxins, food mutagens and carcinogens, and their recovery in malignant human tumors

Introduction: Aflatoxins (AFs) are secondary metabolites produced by the fungi *Aspergillus* mainly *A. flavus*, *A. parasiticus* and *A. nomius* with toxic effects on animal and human health. The International Agency for Research on Cancer classify AFs as Group 1 of carcinogens proved for humans. AFs contaminate cereals, oilseeds, spices, dry fruits, animal foods such as meats, eggs and dairy products. AFs are considered unavoidable cancer risks for their frequency and toxicity.

Methodology: For the identification and quantification of AFs in food and feed, the first procedure is to validate the methodology, the chemical extraction purifies and concentrates them with anti-total aflatoxin immunoaffinity columns and the identification and quantification is done with High Performance Liquid Chromatography. For the human malignant tumors the choice is Indirect Inhibitory ELISA that gives an accuracy up to femtograms (1x10⁻¹⁵).

Results and Discussion: The concentration of four different AFs (AFB1, AFB2, AFG1, AFG2) and four hydroxylated metabolites (AFM1, AFM2, AFP1, AFL) will be obtained as well as the AFB1 bounded to the human DNA, AFB1-formamidyropyrimidine or AFB1-FAPY adduct (active carcinogen) from the human malignant tumors of liver, cervix colorectal, pancreas, or urine.

Conclusions: The presence of the carcinogen in the DNA of the malignant tumor and its absence or just traces in the controls testifies the role of this food carcinogen in the development of different cancers.

Keywords: toxins of *Aspergillus*, cancer, contamination.

Speaker Biography

Magda Carvajal-Moreno is a Researcher at Ciudad Universitaria at USA.

e: magdac@ib.unam.mx