

Master thesis

Department of Food Chemistry and Toxicology

Combinatory genotoxicity of deoxynivalenol and anticancer drugs

We are searching for a highly motivated Master student who is interested to investigate the combinatory effects between the mycotoxin deoxynivalenol and anticancer drugs. Emerging evidence suggests that our diet not only influences our overall health and cancer risk but also interacts with the effectiveness of cancer treatments. Despite growing awareness of food-drug interactions, significant gaps remain regarding the impact of food contaminants on cancer therapies. This might result in patients consuming food products that worsen side effects or decrease the efficacy of anticancer therapies.

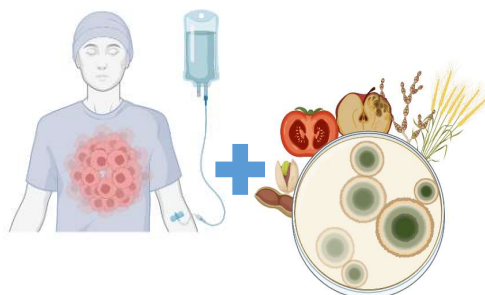
Some of the most prevalent food contaminants are mycotoxins, such as deoxynivalenol. A recent survey by the European Food Safety Authority (EFSA) reported that almost 50% of cereals are contaminated by this toxin. Deoxynivalenol is a known ribotoxin and can lead to inflammation. Despite not being genotoxic itself, recent studies reported that deoxynivalenol has the potential to exacerbate DNA damage caused by other genotoxic agents.

Consequently, in this Master thesis the genotoxic potential of deoxynivalenol in combination with the anticancer drugs SN38 and 5-FU will be further elucidated with cell culture techniques. To that end, colon cancer cells (HCT116) will be utilized to investigate the combinatory effects on cell viability, apoptosis, genotoxicity (via comet assay) and DNA repair proteins (western blot).

The project will be conducted in the group of Prof. Doris Marko.

Requirements:

- ✓ Interest in cell culture and toxicology
- ✓ Prior experience in cell culture is beneficial
- ✓ Cooperative working style
- ✓ Enthusiasm for research



Interested students should send their application (letter of motivation, curriculum vitae, degree certificate/Sammelzeugnis) via email to:

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