

Antibodies to measure residual levels of mycotoxin ochratoxin A in food

CSIC and the University of Valencia have developed antibodies capable of determining ochratoxin A in food and ensure compliance with legislation on food products regarding the presence of this mycotoxin. Antibodies have been generated using novel functionalized derivatives of ochratoxin A. These immunoreagents have shown their efficacy in both direct and indirect competitive ELISA to detect concentrations close to parts per trillion.

We are looking for companies interested in patent licensing for the development of fast, sensitive and portable kits for the analysis of ochratoxin A in foods and beverages based on these antibodies.

The license of the patent is offered

Effective, fast and accurate detection

One of the most harmful and frequent mycotoxins in food is ochratoxin A. Its presence is a real problem for human health due to its toxicity, and it causes significant economic losses to various productive sectors. The main fungi producing ochratoxin A belongs to the genera *Penicillium* and *Aspergillus*, and the products with the highest incidence are cereals, wine, juices and coffee.

The small concentrations at which this potent toxin is usually found commonly require the use of sophisticated chromatographic methods. An alternative is the generation of antibodies against ochratoxin A with superior performance to the existing ones that allow this toxin being recognized with high affinity and specificity. These immunoreagents can be easily implemented in various analytical platforms, from the simplest, such as competitive ELISAs and immunochromatographic strips, to more complex, like chips or biosensors of different types, which allows us to simultaneously analyze a large number of samples in low-resource settings such as warehouses, cellars and even farmlands.



Ochratoxin A has a higher incidence in cereals, wine, juices and coffee

Main applications and advantages

- Ochratoxin A derivatives functionalized at new positions have been synthesized that faithfully preserve the structure and characteristics of this potent mycotoxin.
- These new compounds have proven to be extremely efficient as haptens to generate antibodies capable of recognizing ochratoxin A with an affinity and selectivity not previously described.
- Immunoassays developed using these immunoreagents have been shown to be very sensitive, allowing analysis of ochratoxin A at levels close to 10 parts per trillion.
- These new methods are faster than instrumental procedures, especially when analyzing complex samples such as wine and coffee.
- The generated immunoreagents are easily adaptable to portable methods, such as ELISA kits or immunochromatographic strips.

Patent status

Prioriy patent application filed suitable for international extension

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