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## **Hapten synthesis and monoclonal antibody-based immunoassays for cyprodinil residue analysis in food**

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Cyprodinil is a systemic novel-generation fungicide of the aniline-pyrimidine family applied worldwide for the prevention and treatment of highly destructive diseases in a large variety of crops, including cereals, fruits and vegetables. In this study, several cyprodinil haptens with different linkers tethering site were prepared by total synthesis and covalently conjugated to carrier proteins. Then, high-affinity monoclonal antibodies to this fungicide were raised for the first time with the aim to produce valuable immunochemical analytical assays. These novel immunoreagents were employed for sensitive competitive immunoassay development in two different formats which were applied to the analysis of strawberry samples. The limits of detection of the optimized assays were 20 and 30 ng.L<sup>-1</sup> for the indirect and direct assay, respectively. Influence over assay parameters of different physicochemical factors was studied. Strawberry samples were extracted following the QuEChERS procedure which is recommended by AOAC and EFSA for pesticide residue analysis in food. Recoveries and coefficients of variation from fortified samples were within standard values. In addition, statistical data analysis carried out by Deming regression showed that the immunochemical results were statistically comparable to those of a reference chromatographic method in using naturally contaminated strawberry samples.

### **Biography**

Guillermo Quiñones-Reyes holds a Degree in Chemistry with Expertise in Agricultural Sciences obtained at the Autonomous University of Zacatecas, Mexico, and a MA in Sustainable Chemistry from the University of Valencia, Spain. He is currently in the final year of his Doctoral studies in Chemistry at the University of Valencia, Spain.

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