

ANTIBODIES TO DETECT RESIDUES OF FUNGICIDES IN FOOD PRODUCTS

INVENTION DESCRIPTION

Modern fungicides, such as boscalid, ciprodinil, pirimetanil or fludioxonil, are commonly used prior to the harvest of fruits and vegetables (pre-harvest) or for the storage of such products after the harvest (post-harvest), being necessary to test the fungicide levels in order to avoid undesired concentrations of residues in food products.

The determination of residue concentration of fungicides in food products commonly requires instrumental analytical methods. These analytical methods use have a high economic cost, and need to be performed by highly skilled personnel and developed in certified laboratories, which use to be far from the production areas. Therefore, these methods have a limitation when carrying out a high number of residue concentration analyses in a short period of time, which is a key factor in order to ensure the food safety.

Researchers from University of Valencia and Consejo Superior de Investigaciones Científicas have developed new reagents to determine the residues in food products and environmental samples of the main fungicides used by the agro-food industry, such as boscalid, ciprodinil, pirimetanil and fludioxonil.

Through the use of a new family of haptens, conjugates and antibodies, this new immunoassay technique allows the detection and quantification of fungicides in a fast, easy, precise and low cost way, solving the limitations of the conventional analytic techniques.

BUSINESS APPLICATION SECTORS

The main application of the technology is in environmental and food analysis, as a procedure for rapid determination, both qualitative and quantitative, of pesticide residues in food and environmental matrices (such as fruits, vegetables, juices, wine,...)

TECHNICAL ADVANTAGES AND BENEFITS

The most remarkable advantages provided by this technology are:

- Easy: The implementation of the technique does not require neither a high professional qualification, nor complex equipments.
- Fast: Allows to analyze a high number of samples in a short period of time, a key feature to ensure the food safety.
- Precise: High selectivity and sensibility of the anylisis
- Less sample pretreatment compared with conventional methods
- Ability to carry out in situ analyses with immunotests
- Low cost determination of pesticides
- Easy adaptation to specific needs of the end user (wineries, food processing industries, agricultural cooperatives...)

ANTICUERPOS PARA DETECTAR RESIDUOS DE FUNGICIDAS EN ALIMENTOS

DEVELOPMENT STATUS OF TECHNOLOGY

The technology has been validated in laboratory, and currently the research group is working on its development and scaling.

INTELLECTUAL PROPERTY RIGHTS

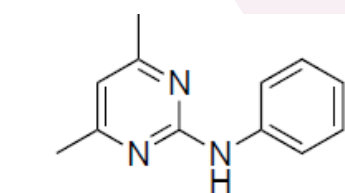
The technology is protected through the following patents:

- Spanish patent application P201031671, titled "Derivados funcionalizados de boscalid". PCT extension PCT/ES2011/070743.
- Spanish patent application P201131641, titled "Haptenos, conjugados y anticuerpos para el fungicida ciprodinil". PCT extension PCT/ES2012/070704.
- Spanish patent application P201230098, titled "Haptenos, conjugados y anticuerpos para el fungicida pirimetanil". PCT extension PCT/ES2013/070013
- Spanish patent application P201231583, titled "Derivados funcionalizados e inmunorreactivos para el fungicida fludioxonil".

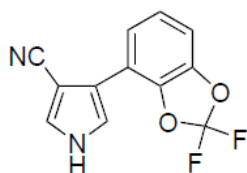
COLLABORATION SOUGHT

- License agreement, manufacturing or marketing.
- R & D project to complete the development or apply to other sectors.
- Subcontracting agreement with another company.
- Possible spin-off (looking for partners)

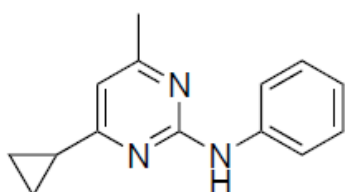
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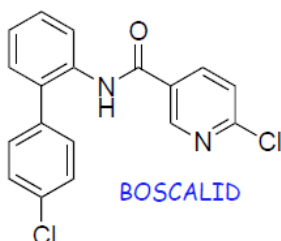
PYRIMETHANIL



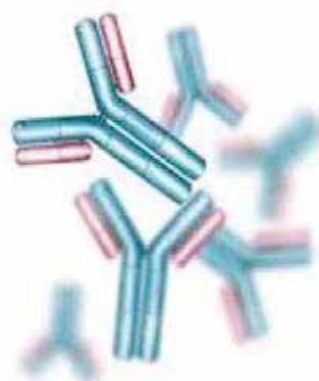
FLUDIOXONIL



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