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**Horia Hulubei National Institute for R&D
in Physics and Nuclear Engineering**

Process for preparing the nanoimmunosorbent silicon dioxide-aminopropyltriethoxysilane-glutaraldehyde-bovine serum albumin-3,6-dichloro-2-methoxybenzoic acid used in ELISA technique for dosing the 3,6-dichloro-2-methoxybenzoic acid pesticide

Patent Number: RO127570/30.07.2013

Abstract

The invention relates to a process for preparing a nanoimmunosorbent silicon dioxide-aminopropyltriethoxysilane-glutaraldehyde-bovine serum albumin-3,6-dichloro-methoxybenzoic acid to be used in the ELISA technique for dosing the 3,6-dichloro-2-methoxybenzoic acid from environmental samples.

Technology stage

The obtained product can be used in ELISA immunochemical technique for dosing the dicamba pesticide from environmental samples and it was validated in this technique.

Applications

- ELISA kits for detection of the pesticide 3,6-dichloro-2-methoxybenzoic acid (dicamba) from alimentary and environmental samples which

leads to increased quality of life through use of uncontaminated food.

- Environmental protection: quantitative analysis of pesticide contaminants from environmental factors (soil, water).
- Chemical industry.

Advantages

- the amount of nanoimmunosorbent used for one immunoassay is extremely small;
- coupling covalently of the antigen of the immunogenic conjugate bovine serum albumine-dicamba to the nanoparticles of silica taking advantage of a specific surface area larger ($> 200 \text{ m}^2/\text{g}$) as compared to the traditional method (cm^2/g);
- the covalent coupling eliminates the desorption of the antigen of the classical method;
- the decreasing analysis time in homogeneous ELISA technique as compared with classical technique where the antigen antibody reaction is heterogeneous (occurs on the surface of the reaction tube).

Derwent Class Codes:

- B04**: Natural products and polymers, testing, compounds of unknown structure;
- D16**: Fermentation industry;
- S03**: Scientific Instrumentation, photometry, calorimetry.

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