

New immunochemical method for determination of bromopropylate in wine

CSIC has developed a technique for the detection and quantification of bromopropylate using an immunochemical method. This method is rapid and efficient able to analyze the presence of this miticide, down to 0.14 µg/L, directly in wine samples or other foods of plant origin without extraction or pre-concentration steps.

An offer for Patent Licensing and/or R+D collaboration

Sensitive bromopropylate quantification system

Bromopropylate (BP) is a miticide extensively used in agriculture against all stages of mites. Its use is banned in some European countries but it is allowed in others, waiting for environmental better alternatives, establishing the maximum residue levels in wine grapes or citrus fruits in 2 mg/kg (Commission regulation (EC) n°149/2008).

The first immunochemical method that allows direct determination of bromopropylate in wine, fruits or other foods of plant origin has been developed. This method based on an indirect competitive ELISA, can detect BP down to 0.14 µg/L, a detection limit far higher than that of the current methods, based in chromatographic techniques, which is around the MRL.

Presence of bromopropylate and other related pesticides may be quantified using this technique without the interference of other pesticides.



Effect of mites, as the yellow spider, in vine or citrus fruits. Treatment is carried out using specific miticides such as BP, whose maximum residue level in wine grape must be below 2 mg/kg.



Main advantages and applications

The main features of the developed technique are:

- Specificity. Cross-reactivity with other pesticides, such as DDT or atrazine, is negligible, except to those with a bis-halophenyl group in their structure.
- High sensitivity. Limit of detection of BP down to 0.16 µg/L, far below the MRL established in Europe.
- The system is rapid, easy to use (less than 75 min). BP can be directly analyzed in white wine samples without any previous extraction or pre-concentration, which is required in the current analytical methods (GC and HPLC).
- It allows simultaneous analysis of multiple samples (HTS)

Patent Status

International PCT application filed

For further information please contact

Isabel Masip, Ph.D.

Institute of Advanced Chemistry of Catalonia
Deputy Vice-presidency for Knowledge Transfer of CSIC

Tel.: + 34 – 93 400 61 00

E-mail: isabel.masip@iqac.csic.es