Detection and monitoring of the organophosphate insecticide chlorpyrifos are required to comply with the limits allowed under different laws of regulatory agencies. Here we report on a piezoelectric immunosensor which can determine and quantify 3,5,6-trichloro-2-pyridinol (TCP), the main metabolite of chlorpyrifos and the herbicide triclopyr. The analysis and quantification of TCP is based on a competitive immunoassay with monoclonal antibody. Therefore, BSA-TS1hapten-conjugate for TCP was attached by a covalent bond to the gold electrode of a quartz crystal by means of both, simple and mixed self-assembled monolayers (SAM and MSAM). Standard calibration curves were obtained with both types, SAM and MSAM, and results were compared. For simple SAM the limit of detection (LOD) and working range obtained were 16 and 25-100 ìg/L, respectively, whereas for MSAM were 9.5 and 18-74 ìg/L, respectively. In both cases, the crystal may be used for about 100 tests without appreciable loss of sensitivity.

Keywords
Chlorpyrifos, QCM, SAM, TCP, monoclonal antibody.