SCIENCESPRINGDAY



Chemistry Department - REQUIMTE

Analysis and Detection of antibiotics in animal foods. Development of new drugs

REQUIMTE-CQFB

ESTSP-IPP/CQB





POLITÉCNICO DO PORTO



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Objectives

The main goals are:

- Identification and quantification of antibiotics in water and food, by HPLC-DAD/FL.
- Monitoring of the behaviour of several bacteria strains in the presence of sub inhibitory concentrations of antibiotics.
- Determination of the resistance profile of bacteria in the presence of selective pressing.
- -Evaluation of antimicrobial activity of potential new drugs.

Methodology

In this work, several active principles of antibacterial drugs were identified and quantified by HPLC-DAD/FL, in order to determine the presence/absence of residues of these drugs in water and food. Furthermore, the impact of the sub inhibitory presence of these drugs was monitorized by exposure of bacteria with different resistance profile to small concentrations of antibiotic.

For the studies of the antimicrobial activity of quinoxaline derivatives, proposed as potential new drugs with antibacterial activity, Clinical and Laboratory Standards Institute (CLSI) guidelines were considered and adapted.

Expected Results

The results expected are:

- Detection and quantification of several antibiotics in food and water.
- Determination of the behavior of bacteria to the presence of residual amounts of antibiotics.
- Characterization of the antimicrobial activity of new derivatives of quinoxaline compounds.

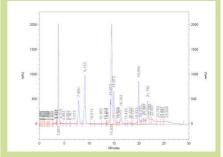


Fig 1. Chromatogram with eight antibiotic active principles – method calibration

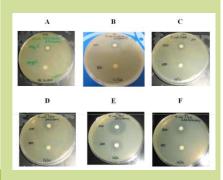


Fig 2. Antimicrobial activity aproach for quinoxaline derivative compounds

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