1 a 3 Dezembro 2015

Congresso

química orgânica e química terapêutica

PORTO · PORTUGAL

"Thinking Organic and Medicinal Chemistry in an inspiring atmosphere"

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WELCOME

"Thinking Organic and Medicinal Chemistry in an inspiring atmosphere"

The Organic and Medicinal Chemistry divisions of the Portuguese Chemical Society (SPQ) would like to express a warm welcome to the 11th ENQO, taking place from december 1-3 in Porto, Portugal. For the first time under the auspices of SPQ, the competences of these two important fields of Chemistry are brought together into a single event, to highlight complementarities and to promote new synergies.

The Scientific Committee has put high expectations on the excellence of the scientific program, which includes plenary/keynote lectures from renowned scientists whose work has been an inspiration for researchers in Organic and Medicinal Chemistry. Oral communications will focus on topics from the following main research fields:
Organic Synthesis
Spectroscopic Methods (in Organic Chemistry)
Organic Natural Compounds
Drug Metabolism and Disposition
Beyond Small Molecules
Computational Methods and Drug Design
Antitumor and Anti-infective Drugs
Industrial Applications
This meeting is expected to bring together researchers with different expertise and perspectives, from senior to young scientists, to discuss and share their latest achievements in a stimulating environment, taking advantage of the inspiring atmosphere of "Teatro Municipal Campo Alegre", a theatre that is a cultural landmark of Porto.

We warmly invite you to come and enjoy the meeting and our beautiful city!

VICTOR DE FREITAS
Conference Chairman

11º ENCONTRO NACIONAL DE QUÍMICA ORGÂNICA
4º ENCONTRO DE QUÍMICA TERAPÊUTICA
1 A 3 DEZEMBRO DE 2015

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Following the removal of fluoroquinolones of the environment: an HPLC-FD method

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Antibiotic residues have been detected in various environmental matrices, such as surface water and even drinking water. Although present at low levels (µg/L, ng/L), many antibiotics are bioaccumulative, pseudo-persistent and can promote resistance/alterations in bacterial populations.[1]

In this work we present the biosorption of three widely used fluoroquinolones (FQ) - ofloxacin (OFL), norfloxacin (NOR) and ciprofloxacin (CPF) to activated sludge (AS) and aerobic granular sludge (AGS). A High Performance Liquid Chromatography with Fluorescence Detection (HPLC-FD) method was validated and optimized to follow the biosorption of the targeted FQ.[2]

The HPLC-FD method was validated according to Q2B ICH guideline.[3]The validated method demonstrated good selectivity, linearity ($r^2 > 0.999$), intra-day and inter-day precisions (RSD < 3%) and accuracy. The detection limits were 0.6 ng/mL for NOR and CPF and 0.7 ng/mL for OFL and quantification limits were 1 ng/mL for three FQs.

Several parameters that can affect FQ biossorption kinetics, namely contact time, pH, biosortion mass were studied. At pH 7 AS showed better performance to biosorb OFL, NOR and CPF than AGS. The higher biosortion capacity of AS was probably due to the negative charge on its surface, evaluated by a zeta potential of -25.65 mV, at pH 7. OFL was the less biosorbed antibiotic, both onto AS and AGS, because at pH 7 this FQ is mainly present in its anionic form. The equilibrium data for AS showed a better fit to the Langmuir model, while the model that presented better fit for AGS was the Freundlich model. The FQ could be desorbed from AGS at pH 3, pH 8 and pH 9 whereas at pH 4 the biosorption process was promoted.

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