

Department of Chemistry - REQUIMTE



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- PhD student FCT-UNL in Sustainable Chemistry under the supervision of Cristina Prudêncio, João Paulo Noronha and Zeljko Petrovski collaborating with Luís Branco
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Development of Novel Ionic Liquids as Active Pharmaceutical Ingredients

REQUIMTE-CQFB

ESTSP- IPP / CQB



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Objectives

The main goals are:

- Synthesis and isolation of new Ionic Liquids (ILs) as active pharmaceutical ingredient (API).
- Characterization of physic-chemical properties of the ILs prepared.
- Study of the biological activity of the new ionic liquids – antimicrobial activity and human cell toxicity studies
- Comparative studies between the new ILs prepared and the active pharmaceutical ingredient used.

Methodology

In this work the anions of ILs and salts were derived from active pharmaceutical ingredients like antibiotics. For synthesis of these compounds we used a recently developed method – Neutralization method. The preparation of quaternary ammonium, pyridinium, imidazolium and phosphonium hydroxides was made by ion exchange resin.

For the studies of the antimicrobial activity we used the methodology describe by the Clinical and Laboratory Standards Institute (CLSI).

Expected Results

The results expected are:

- Producing pure ILs-APIs in good yields.
- Obtain APIs with Improved biological and physic-chemical properties when compared with traditional compounds.
- Characterization of new APIs biological activity in order to get compounds with increased the antibacterial activity and reduced human toxicity.

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