



Abstract book of the XVIII National Meeting of the Portuguese Society of Chemistry



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Title

Abstract book of the XVIII National Meeting of the Portuguese Society of Chemistry

Editors

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Combining natural bile acids with old basic drugs affords new triple stage antimalarial surface-active ionic liquids

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Ionic liquids (ILs) are special organic salts that have been gaining momentum in medicinal chemistry. Despite their simple and cost-effective synthesis, ILs offer an easy access to structures of biological interest by combining bioactive molecules with opposite polarities, e.g., via simple ionic pairing of an acid with a base. [1] This makes ILs of special interest for treating malaria. Since this disease is prevalent mainly in low-to-middle income countries, novel chemotherapeutic strategies must be kept affordable. Malaria is caused by *Plasmodium* parasites, whose complex life cycle includes three developmental stages in the host: the blood stage, the liver stage, and the gametocyte stage. This complexity turns the development of new effective drugs quite difficult, which is aggravated by the fast emergence of drug-resistant strains. This fact has often led to the disuse of several antimalarials, driving the need to find new ones with multiple-stage action. In this context, we have been working on new antimalarial ILs by mixing antimalarial aminoquinolines—chloroquine and primaquine—with natural lipids. [2-3] Two new families of salts derived from those antimalarial drugs and naturally-occurring bile acids were now produced by acid-base neutralization, and evaluated for their antiplasmodial action. The chloroquine-derived bile salts were found active against all the three stages of parasite development in the host. Their behavior as surface-active ionic liquids (SAILs), i.e. their interfacial and self-aggregation properties, were also investigated, as they may contribute critically to their delivery and therapeutic action.

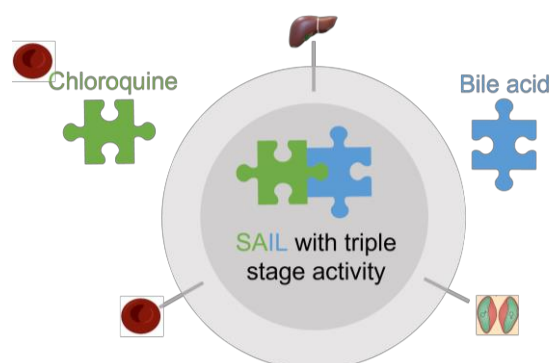


Figure 1: Synthesis of ionic liquid by a simple neutralization reaction.

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