**SYNTHESIS AND REACTIVITY OF** β **-KETOSULFIDES IN DEEP**

**EUTECTIC SOLVENTS**

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Deep eutectic Solvents (DESs) have appeared in the recent years as an appealingalternative to classical organic solvents, due to their valuable environmental properties [1]. In addition, these compounds, formed by the combination of one hydrogen bond donor with a hydrogen bond acceptor at a defined stoichiometric ratio, present other valuable activities not only as a reaction medium [2]. β-Ketosulfide motif constitutes an interesting organic framework, widely present in natural products and it presents interest in biological and pharmaceutical chemistry [3]. These compounds can be obtained from thiols or other sulfur sources, such as disulfides or silylsulfides employing metals or organocatalysts [4]. Recently, the synthesis of β-ketosulfides has been described employing lipases from from β-alkylsulfide enol esters, but these compounds were obtained using dimethylformamide (DMF) as solvent [5]. The preparation of β-ketosulfides employing DESs will be discussed herein, showing a novel multicomponent one pot reaction under mild conditions employing 2-bromoacetophenone as starting material. The obtained β-ketosulfides have been reduced into optically active β-hydroxyulfides employing alcohol dehydrogenases also in presence of DESs (Scheme 1).

A diagram of a chemical reaction

Description automatically generated

**Scheme 1:** Multicomponent one pot reaction to prepare β-ketosulfides and bioreduction to optically active β-hydroxyulfides.

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