RESOLUTION OF CHIRAL SULFINYL COMPOUNDS VIA $\beta$-CYCLODEXTRIN INCLUSION COMPLEXES

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SUMMARY

The optical resolution of racemic aralkyl sulfoxides via their inclusion complexes with $\beta$-cyclodextrin was recently reported from our laboratory. To obtain more information concerning the relationship between the chirality and optical purity of the included sulfoxides and the structure of their inclusion complexes, the resolution of a series of o- and m-tolyl alkyl sulfoxides was carried out. The influence of other factors such as pH and the presence of inorganic salts on the stereoselectivity of the inclusion of sulfoxides was also investigated. The results on the resolution of sulfinamides via $\beta$-CD complexes are also presented.
Cyclodextrin inclusion complexes with racemic compounds (guests) are mixture of diastereomers which can be formed in unequal amounts. Therefore, stereospecific inclusion into cyclodextrins (hosts) can be applied for optical resolution of racemic compounds. By this method, first reported by Cramer and Dietsche [1], we were able to resolve a series of chiral sulfoxides 1, sulfinates 2, and thiosulfimates 3 [2].

The relationship observed between the stereospecificity of the inclusion of sulfoxides 1 into β-cyclodextrin and the chirality of the preferably included sulfoxide led us to propose that the two concurrent inclusion complexes 4A and 4B are formed the ratio of which is dependent on the nature of alkyl substituent at sulfur. In the case of t-butyl aryl sulfoxides the formation of the inclusion complex 4B is favoured due to steric reasons.

![Diagram of inclusion complexes 4A and 4B]