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Modification of Kagan's amide for improved activity as Chiral Solvating Agent in enantiodiscrimination during NMR analysis

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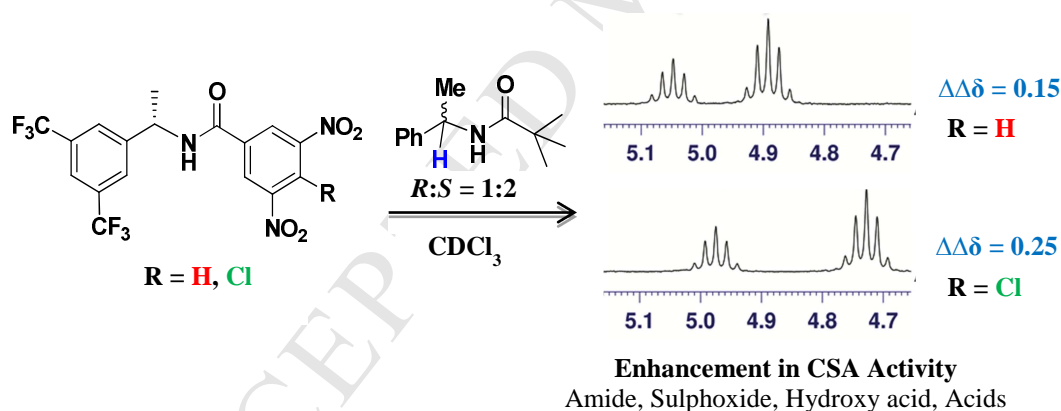
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Abstract



A modification is proposed in Kagan's amide in order to improve its ability to offer stronger hydrogen bonding and hence better ability to bind with substrates. Introduction of chlorine in the amide aromatic ring along with the two nitro groups, increases the acidic character of amide hydrogen and makes the hydrogen bond stronger, the concept is tested by making three derivatives of Kagan's amide and the effect is confirmed by nmr analysis. The modified chlorinated Kagan's amides were then tested as chiral solvating agents for detection of optical purity of several types of substrates where the supramolecular recognition is measured by in situ nmr analysis. Several guest molecules such as amide, sulfoxide, epoxy-keto, hydroxy acid, diacid and phosphoric acid were scanned for this study and its efficiency is further established by comparison with samples of known optical purity.

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