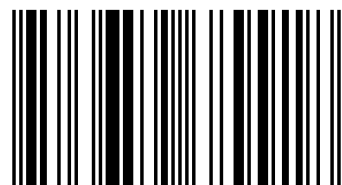


This work describes different strategies to desymmetrise 1,4-cyclohexadiene derivatives with concomitant formation of a quaternary stereogenic centre. Chapter 1 briefly describes the previous desymmetrisation processes of 1,4-cyclohexadiene derivatives. Chapter 2 describes the formation of the quaternary stereogenic centre using achiral cyclohexa-1,4-dienone derivatives. Stereoselective formation of a quaternary stereogenic centre was achieved using a chiral sulfinyl group as the stereodirecting influence during the cyclisation step. Chapter 3 outlines attempts to improve the level of the obtained diastereoselectivity. Chapter 4 describes the desymmetrisation of the two diastereotopic double bonds of derivatives of cyclohexa-1,4-diene using free-radical methodology. Chapter 5 describes using Prins cyclisation reaction to desymmetrize the two diastereotopic double bonds of 1,4-cyclohexadiene derivatives. This approach afforded an easy and stereocontrolled access to fused tetrahydropyrans and tetrahydrofurans depending on the reaction conditions employed. The stereochemical outcome of all of these reactions was rationalised by a single transition state model

Desymmetrisation of Cyclohexa-1,4-Diene



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978-3-659-68991-8

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Sulfoxide, Radical and Lewis acid mediated Prins
Cyclizations Reactions

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