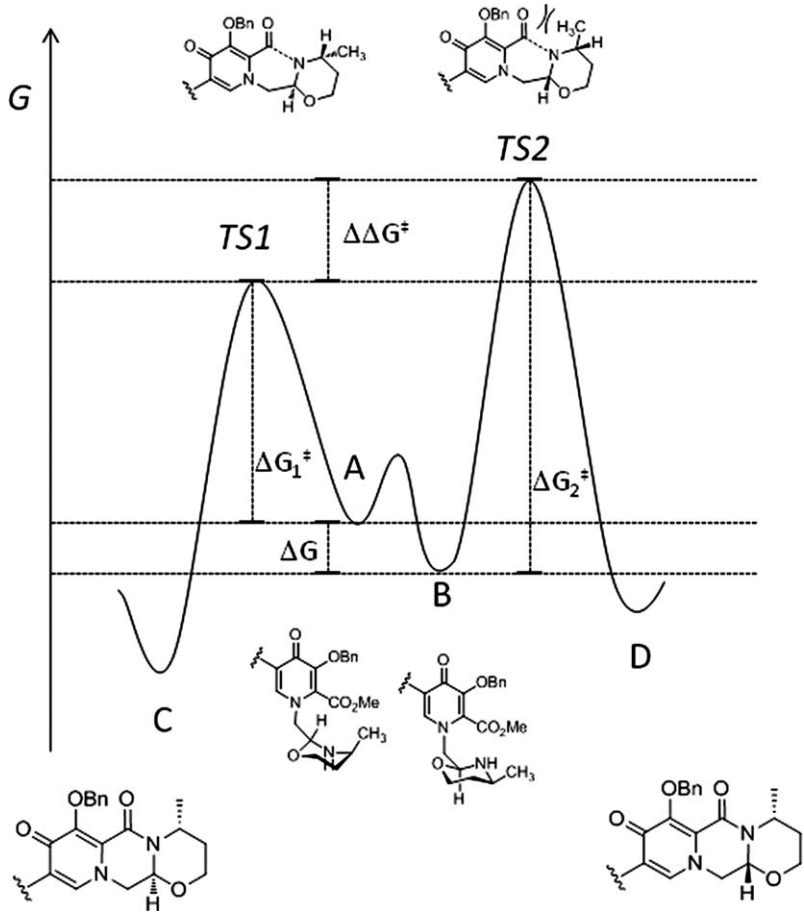

Figure 6.8 Curtin–Hammett explanation of 4-methyl substitution stereochemistry.

In fact, a Curtin–Hammett scenario is established as a result of a significant eclipsing interaction, resulting in a high-energy TS2 compared with the alternative axial methyl-containing TS1. There is a 3.6 kcal mol^{-1} energy difference between the two diastereomeric products favoring C, which is observed experimentally as the predominantly observed product with >20 : 1 selectivity.

The findings for the 1,3-amino alcohols stimulated our interest to investigate the related 1,2-aminopropanols to explore the diastereoselectivity of this system. Our initial attempt using (*R*)-1-aminopropan-2-ol (**29**) gave disappointing results, with a difficult-to-separate 3:1 mixture of diastereomers (**30**) [eqn (6.3)]. However, switching to the regioisomeric (*R*)-2-aminopropan-1-ol (**31**) gave a >40 : 1 mixture of diastereomers favoring the *trans* stereochemistry as shown in **32** [eqn (6.4)]. This is again explained as a result of a Curtin–Hammett situation, whereby the energetically favored intermediate is