

Borylated cyclobutanes via thermal [2+2]-cycloaddition

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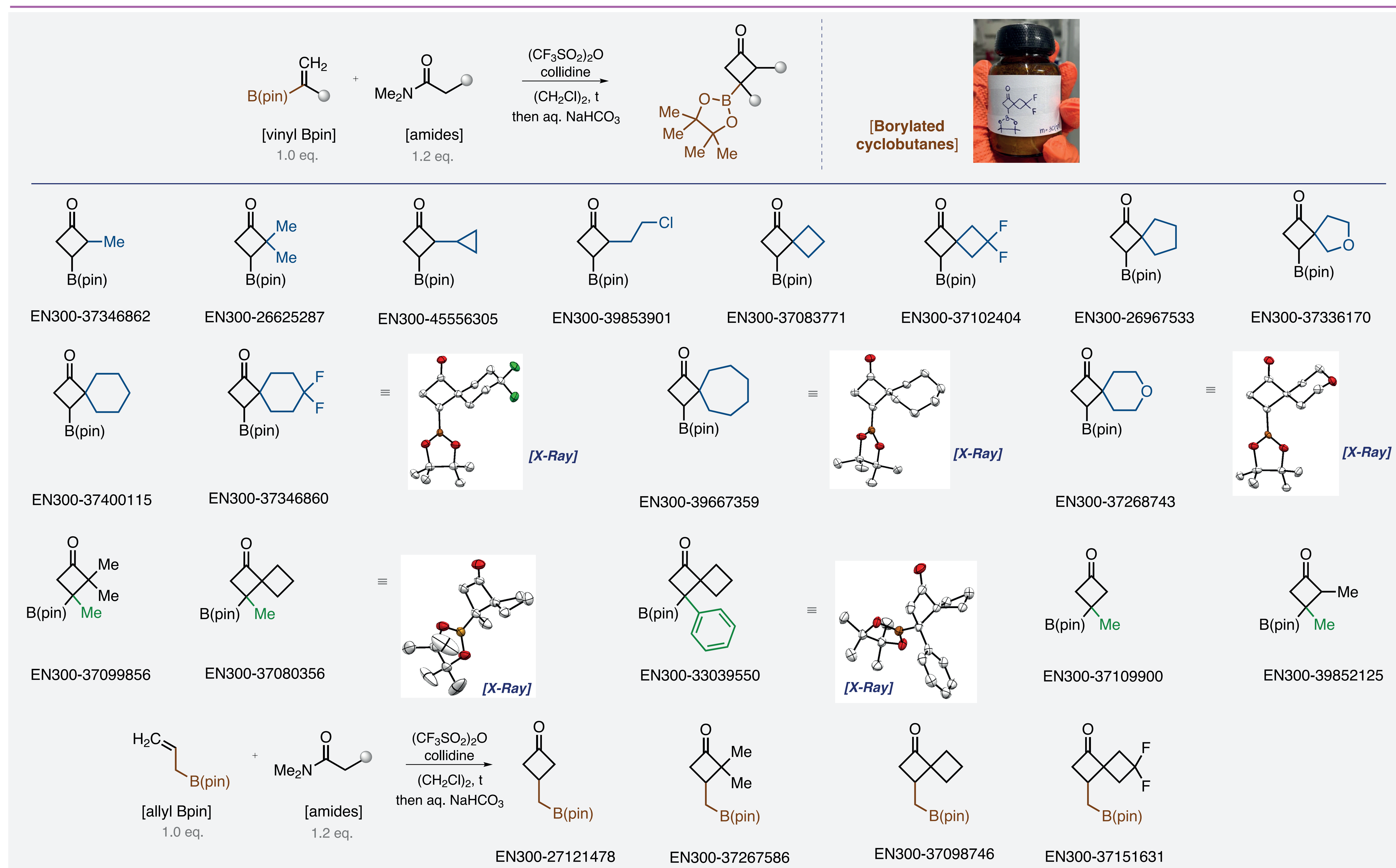
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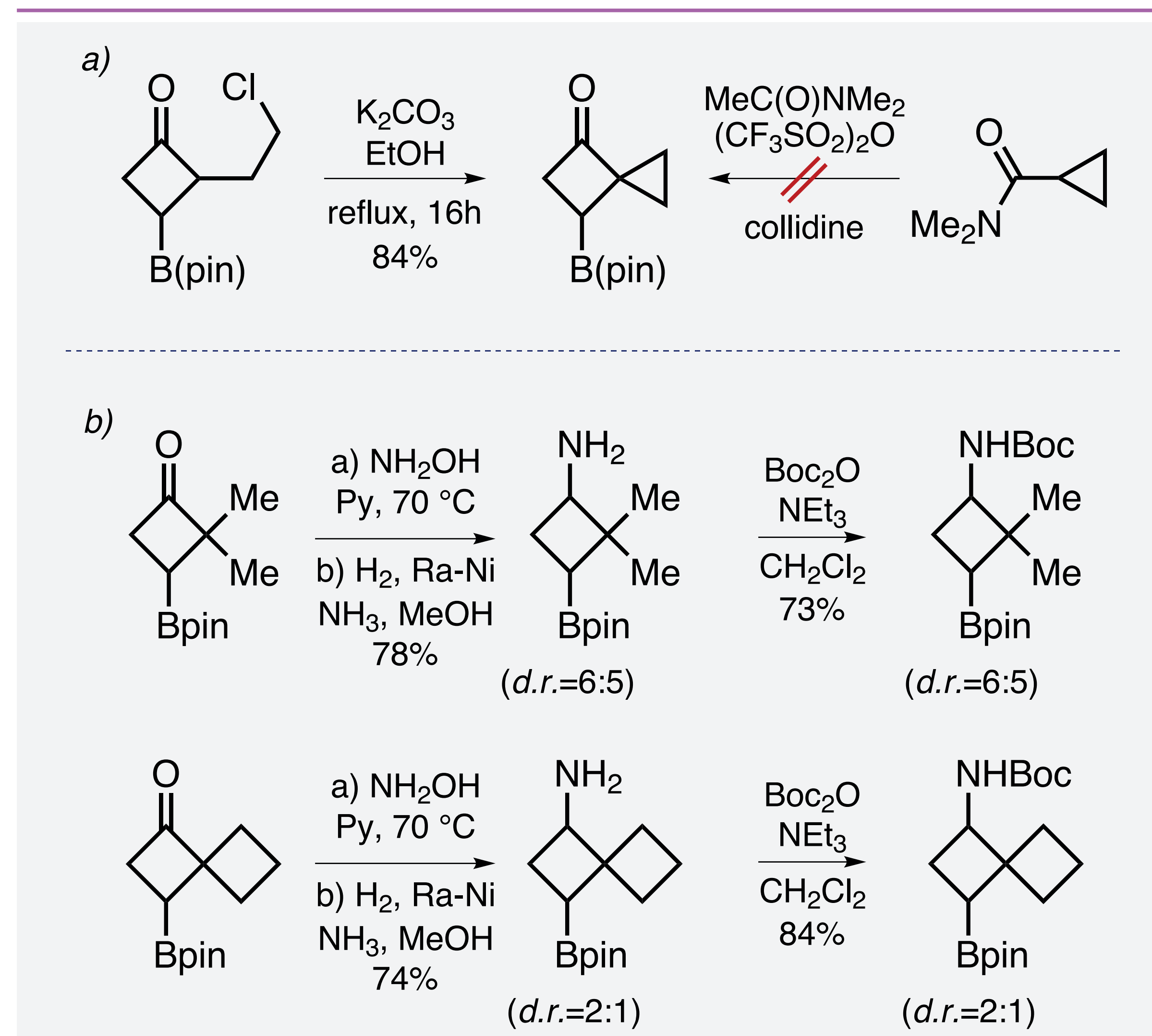
Introduction and Aim

Small aliphatic rings attract a considerable attention in the contemporary research.¹ For example, the cyclobutane ring is common within modern bioactive compounds, and can be found in the structures of at least ten market-approved drugs.² In this work, we elaborated a thermal [2+2]-cycloaddition between vinyl boronates and in situ generated keteniminium salts. This practical approach allows the preparation of borylated cyclobutanes in one step.³

Results

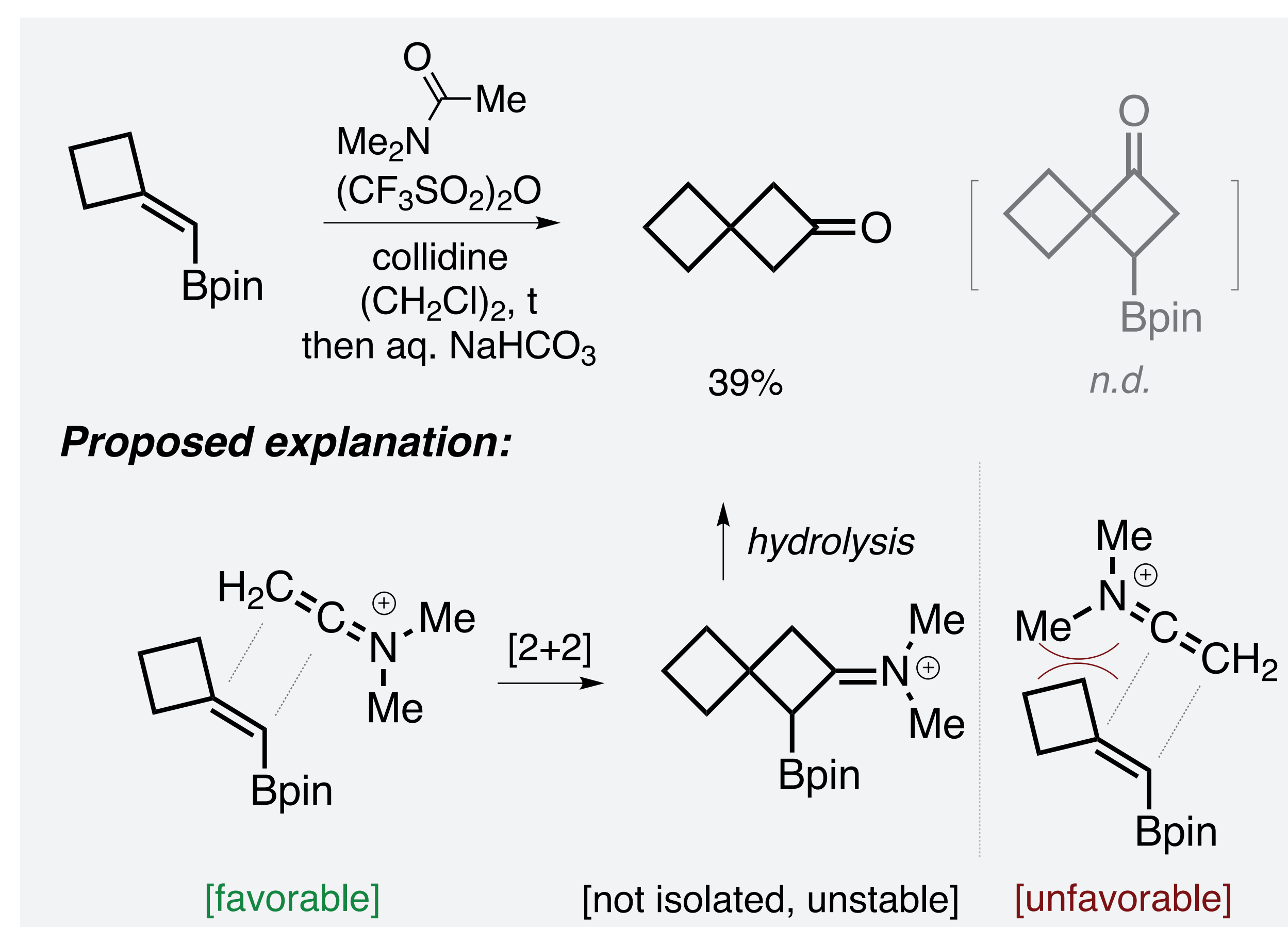


Modifications



Unexpected results

Somewhat unexpectedly, the reaction between β,β -disubstituted vinyl boronate and N,N-dimethylacetamide produced ketone rather than the borylated cyclobutane.



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References

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2. M. R. van der Kolket *al.*, *ChemMedChem* **2022**, 17, e202200020.
3. K. Prysiazniuk *et al.*, *Chem. Sci.*, **2024**.