BROMINATION OF 1,2-DISUBSTITUTED CYCLOBUTENES

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A cyclobutene is one of the simplest cyclic alkenes that has found numerous applications in organic synthesis. Recently, we have developed a versatile method for the preparation of 1,2-disubstituted cyclobutenes 1.^[1] To our surprise, the bromination of cyclobutenes 1 remains an untouched area of cyclobutene chemistry, hence our next aim was to investigate the reactivity of cyclobutenes 1 with bromine.

For the purpose of this work, a series of 1,2-disubstituted cyclobutenes 1 has been prepared bearing a wide range of substituents. These starting substrates were subjected to different reaction conditions resulting in the quantitative formation of allylic substitution product 2 demonstrating exceptional regionselectivity of the bromination reaction. Thus, the obtained results including the proposed reaction mechanism and possible synthetic application of brominated cyclobutenes 2 will be discussed.

^[1] P. Polák, T. Tobrman, Eur. J. Org. Chem., 2019, 957-968.