HALOTRIAZOLIUM SALTS AS ORGANOCATALYSTS IN AZA-DIELS-ALDER REACTION

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In recent years several papers have been published in which halogen bond (XB) donors have been used as organocatalysts [1]. These compounds can be viewed as new tools for organic chemistry. For example, the XB donors could be used as complementary catalysts in the design of new asymmetric cascade reactions. However, to the best of our knowledge, there are no examples of asymmetric XB catalysis.

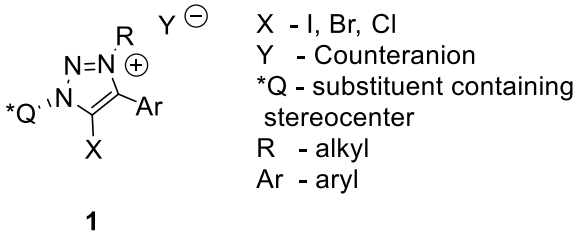

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Fig.1 General structure of halotriazolium salt type XB donors.

Triazole based XB donors are great candidates for catalytic applications as the copper(I)-catalysed click reaction and following quaternization give access to highly tunable catalyst leads (Fig. 1). We have previously shown that chiral halogen substituted triazoles form complexes with imines, thioureas and are capable of enantiodiscrimination [2]. These XB donors are also capable of acting as organocatalyst in the Aza-Diels-Alder reaction (Fig. 2).

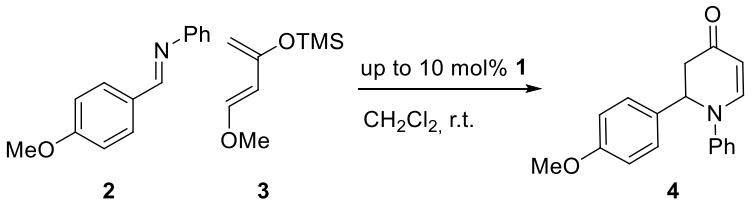

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*Fig.2 Aza-Diels-Alder reaction catalysed by halotriazolium salt **1**.*

References

1. D. Bulfield, S. M. Huber, **2016**, *Chem. Eur. J.*, 22, 14434.
2. M. Kaasik, S. Kaabel, K. Kriis, I. Järving, R. Aav, K. Rissanen, T. Kanger, **2017**, *Chem. Eur. J.*, 23, 7337.

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