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C-C bond cleavage of aziridines

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Aziridines exhibited intriguing and diverse reactivity, and thus have become unique and versatile synthons in organic synthesis. C–N/C–C bond cleavage of aziridine ring is a useful way to serve as three-atom synthons with extensive applications in organic synthesis.¹

In contrast with ordinary solvents, such as Volatile Organic Compounds (VOC), DESs have a very low vapour pressure, and thus are non-flammable. The same reference mentions that DESs have a relatively high viscosities which might hinder their industrial applications as they might not flow easily in the process streams. DESs favorably possess low densities and can be liquid at a wide range of temperatures. Other studied properties for some DESs are their electrical conductivities, pH indices and surface tensions, which might be added to this article by any contributor.³

Unexpected regioselective oxidation of ketoaziridines to the corresponding aldehydes with choline chloride/thiourea is described. This regio-selective reaction presumably precedes via a domino sequence C–C/C–N cleavage of ketoaziridine ring. This metal-free method proved to be efficient for the oxidative cleavage of several ketoaziridines in moderate to good yields.

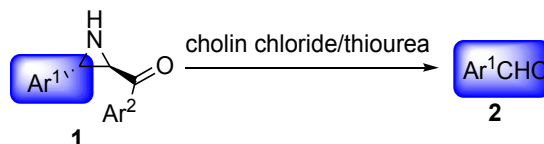


Figure 1.Regio-selective oxidation reaction of ketoaziridines

References

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- [3] G. García, S. Aparicio, R.Ullah and M.Atilhan, *Energy Fuels*, 2015, 2616.