New Methods for Amide Bond formation and Oxazole Synthesis

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Synthesis of amide bonds is one the most important issues in organic chemistry. The reaction between thioamides and silver carboxylates, initially, has been investigated for development into a general method for amide bond formation. A range of carboxylic acids and thioamides were reacted in the presence of silver (I) carbonate to generate imides. This system was shown to be effective for different N-protected amino acids and thioamides, including the preparation of dipeptide imides. Investigations of the cleavage of the imide products suggest this may be a viable general method for amide bond formation.²

Furthermore, dipeptide thioamides were shown to be useful precursors to 2-amino oxazoles.

References:

[2] A, Pourvali.; J. R. Cochrane.; C. A. Hutton., Chem. Comm.2014, 50, 15963.

^[1] Avalos, M.; Babiano, R.; Cintas, P.; Duran, C. J.; Higes, F. J.; Jimenez, J. L.; Lopez, I.; Palacios, J. C., Tetrahedron 1997, 53, 14463.