

One-pot Synthesis of polyheterocycles by MCR: the Ugi–Zhu three component reaction.

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The rapid generation of molecular complexity from simple and readily accessible starting materials is a contemporary research theme in the practice of modern organic synthesis. The combination of a multicomponent reaction with an efficient post-transformation, typically a ring-forming process, has been proven to be a powerful tool for the synthesis of highly functionalized polyheterocyclic compounds. A variety of reactions including condensation, ring-closure metathesis, cycloaddition, macrolactonization, intramolecular SNAr reaction, etc. have been combined with an isonitrile based multicomponent reaction (I-MCR) for the construction of cyclic scaffolds.

This presentation will summarize some of our recent contributions in this area. The Ugi-Zhu three component reaction will be discussed for the synthesis of highly functionalized pyrrolo[3,4-b]pyridin-5-onas obtained *via* one-pot process with great atomic economy.

