

Abstract

Multicomponent Reactions with Heterocycles: A Source of Novel Scaffolds for Antiparasitic and Antiviral Agents [†]

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We disclose a reaction discovery approach, based on novel multicomponent reactions (MCRs) upon heterocyclic substrates, especially azines, that yields a variety of scaffolds amenable to straightforward diversification. In just one step, we could jump from one generation of compounds to the next one by mere modification of the reagents. This feature greatly helps in the tuning of the biological properties and has allowed the formation of two classes of anti-infectious agents: antiparasitic and antiviral compounds. First, the silyl-promoted addition of isocyanides to azines yields pyridoimidazolium salts which are potent anti-trypanosoma agents. Next, we discuss the multiple multicomponent reaction approach on diaminodiazines using the Groebke–Blackburn–Bienaymé MCR as a source of new antiviral compounds, also featuring specific DNA affinity.

Details on the chemistry and biology related to these processes will be discussed.

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