Research Work Title

Design and Synthesis of Bifunctional Compounds and Their Capability in the Synthesis of Organic Compounds

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Abstract

In the field of organic chemistry, it's not impossible to synthesize any product, however, the most important aspect is to design a suitable synthetic route that reduces the number of reaction steps, has a high atom economy, and results in the synthesis of functionalized targets, all while being environmentally friendly. One approach to achieving this is by designing cascade reactions using bifunctional compounds. In recent years, we have focused on synthesizing bifunctional compounds to obtain novel, complex compounds with biological activities through cascade and stepwise reactions. The advantages of these reactions include high bond-forming efficiency, high atom economy, high diastereoselectivity, mild reaction conditions, and easy separation and purification. Not only are these methods effective for the synthesis of complex and functionalized compounds, but with the experience gained, it's also possible to prepare many active pharmaceutical ingredients and materials with high added value.