ADAPTING MECHANOCHEMICAL C–N BOND FORMING REACTIONS FOR GREENER SYNTHESIS OF PHARMACEUTICALS

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Mechanochemical organic synthesis is paving the road towards a greener and more sustainable chemical industry [1]. However, in order to target important application areas such as the pharmaceutical industry, the current synthetic toolbox must be expanded and improved. This is particularly important in key green chemistry research areas dealing with C–N bond forming reactions [2], which include the synthesis of amides and amines. Here we present our recent developments aimed at addressing existing challenges in the field [3, 4], such as the chemoselective amide coupling of hydroxycarboxylic acids and the direct synthesis of amines from alcohols. These methods have been used to prepare bioactive compounds, including the important anticancer drug Imatinib (Fig. 1).

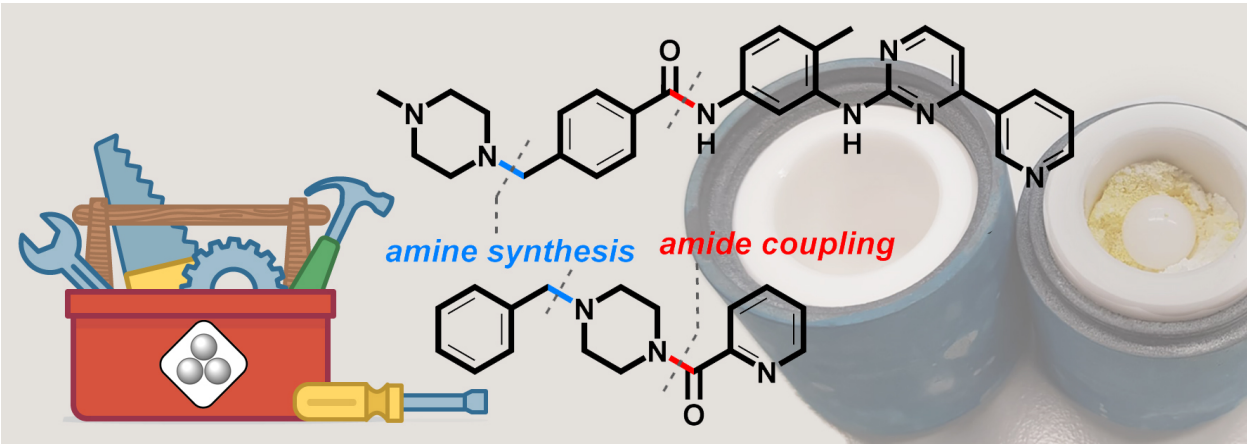

Figure 1. *The use of mechanochemical amide coupling and amine synthesis in pharmaceutical preparation.*

References

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