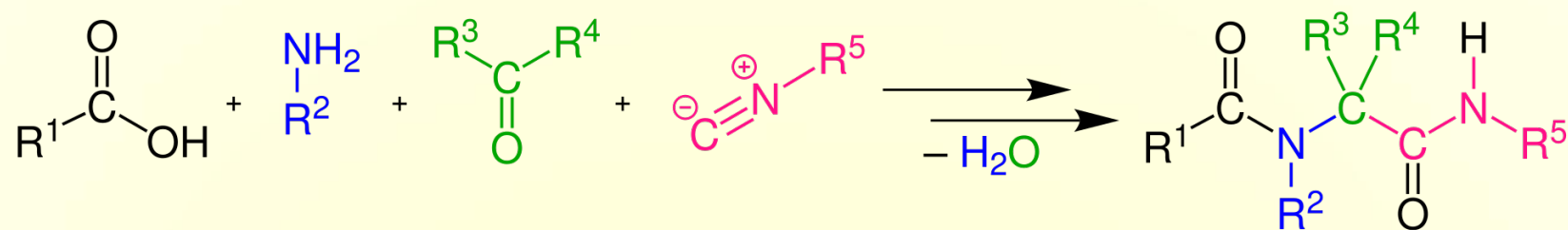


UGI MULTICOMPONENT REACTION

2019-07-09

WZQ

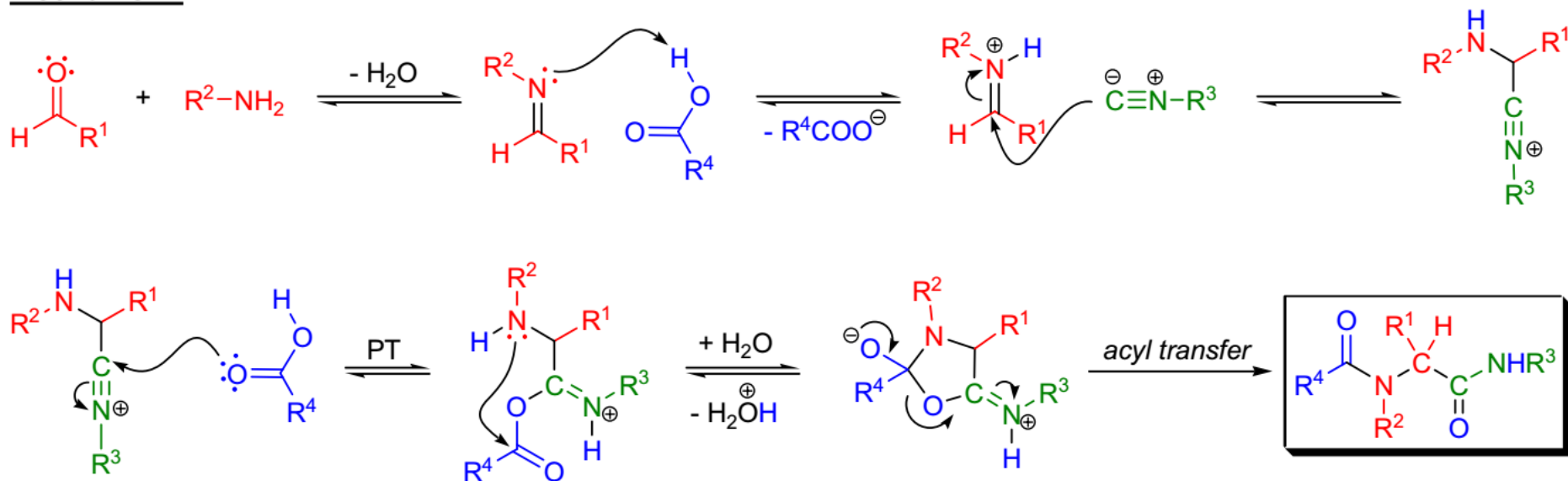
UGI MULTICOMPONENT REACTION



Ugi reported In 1959

UGI MULTICOMPONENT REACTION

Mechanism: ^{4,3-4,3}

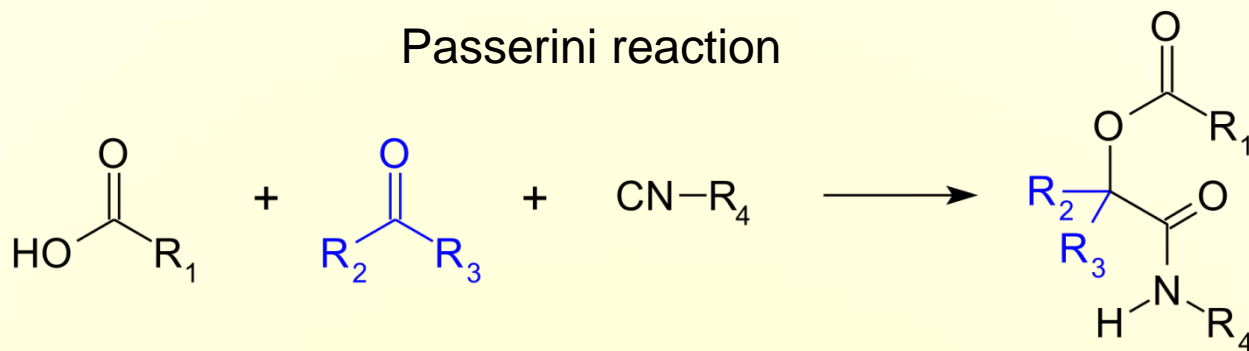


UGI MULTICOMPONENT REACTION

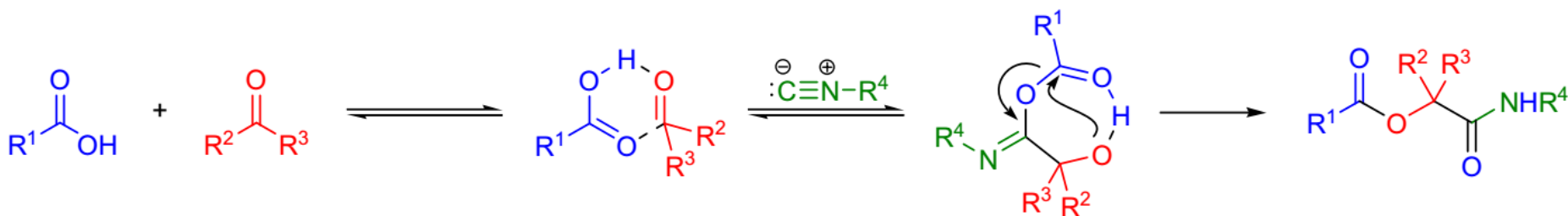
- 1) Usually, the isocyanide is added to a stirring and well cooled solution of the other three components
- 2) In case of less reactive aldehydes and ketones, it is advisable to precondense the carbonyl compounds and the amine to form the imine
- 3) The reaction is very exothermic, adequate cooling is necessary
- 4) High concentration (0.5M - 2.0M) of reactants give the highest yields.
- 5) Polar, aprotic solvents, like DMF, work well. However, methanol and ethanol have also been used successfully.
- 6) the amine component can be any compound with a sufficiently nucleophilic NH group
- 7) when nonpolar solvents are used, or the reacting components are bulky, the Passerini reaction may occur as a side reaction leading to the formation of α -acyloxycarboxamides.

UGI MULTICOMPONENT REACTION

Related Reactions:



mechanism

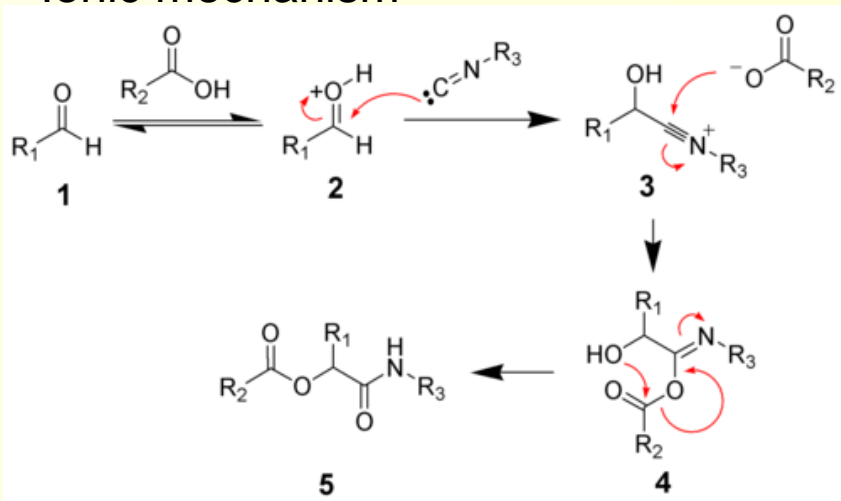


UGI MULTICOMPONENT REACTION

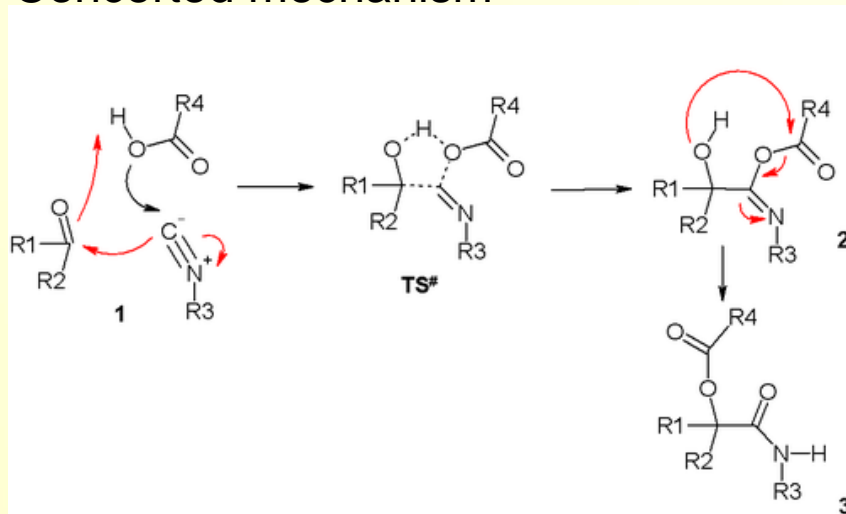
Related Reactions:

Passerini reaction mechanism

Ionic mechanism



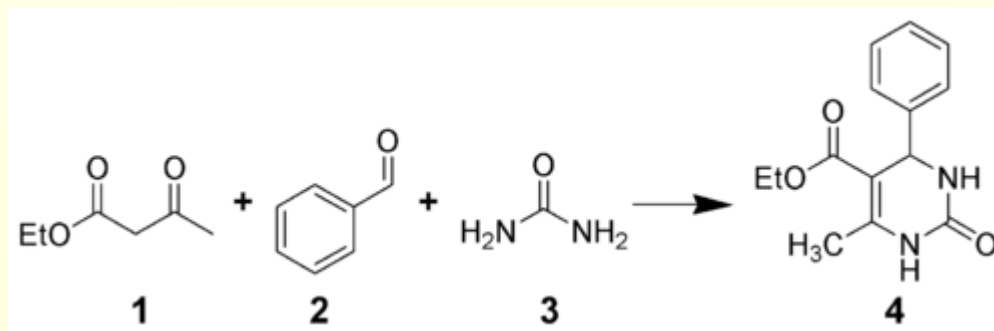
Concerted mechanism



UGI MULTICOMPONENT REACTION

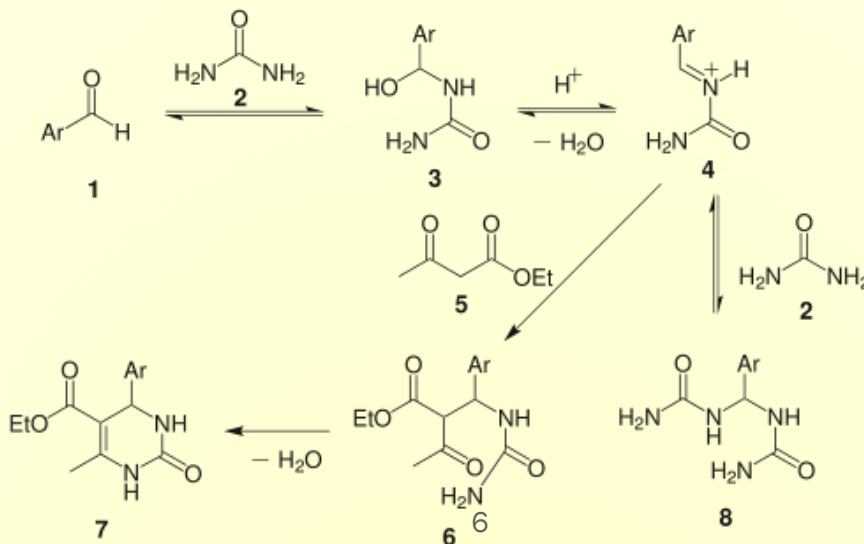
Related Reactions:

Biginelli reaction

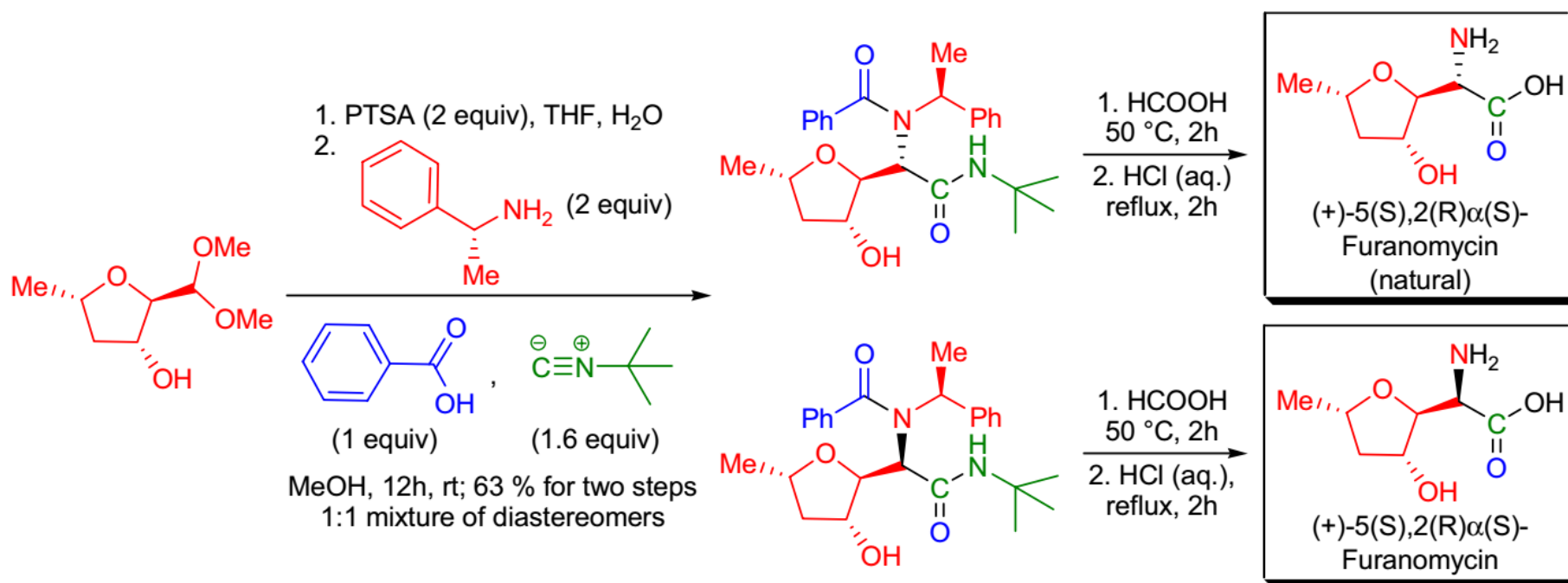


This reaction was developed by Pietro Biginelli in 1891

mechanism



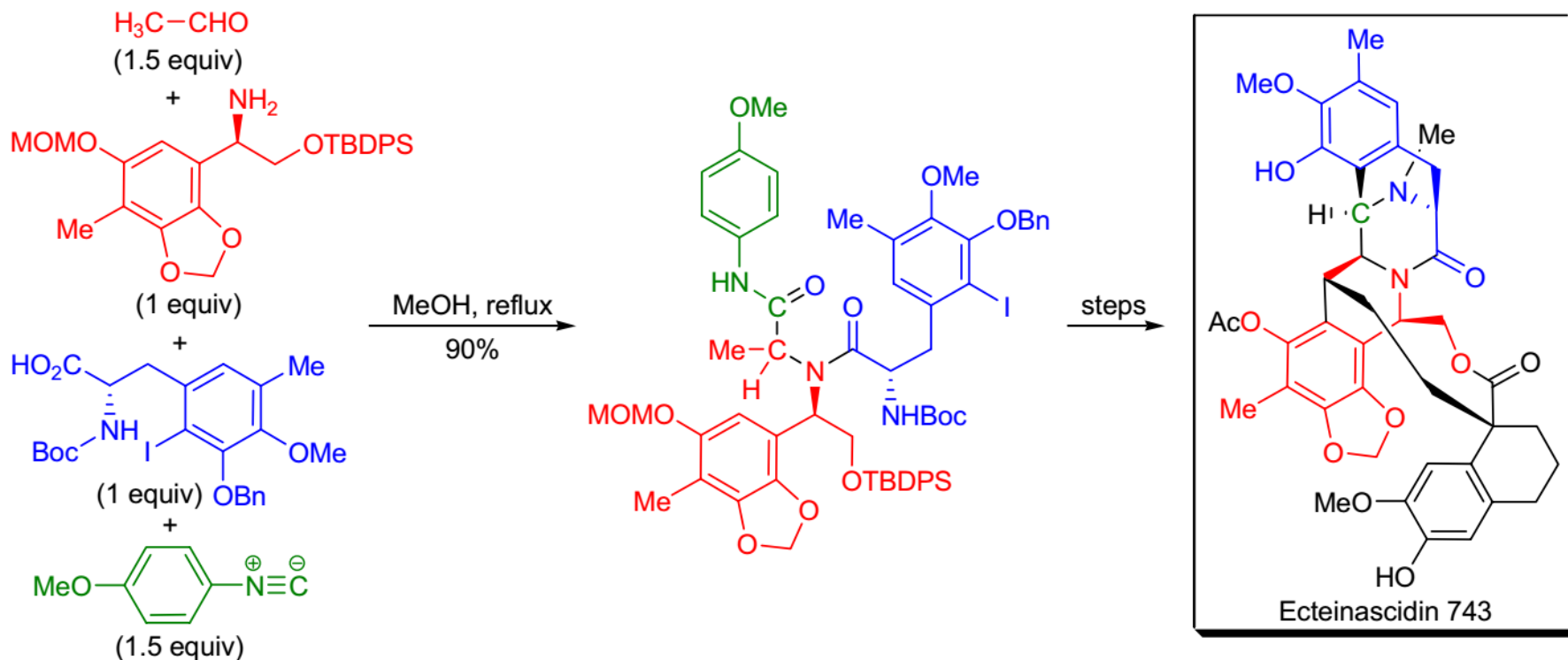
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J. Am. Chem. Soc. 1980,102, 7505-7510.

UGI MULTICOMPONENT REACTION



J. Am. Chem. Soc. 2002, 124, 6552-6554.