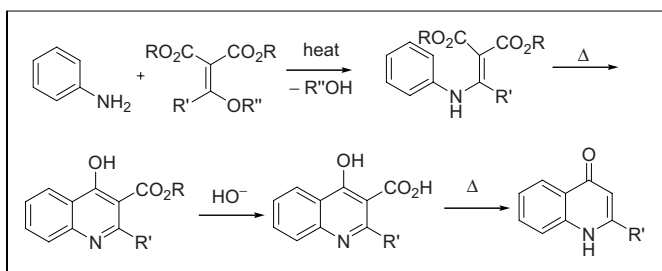


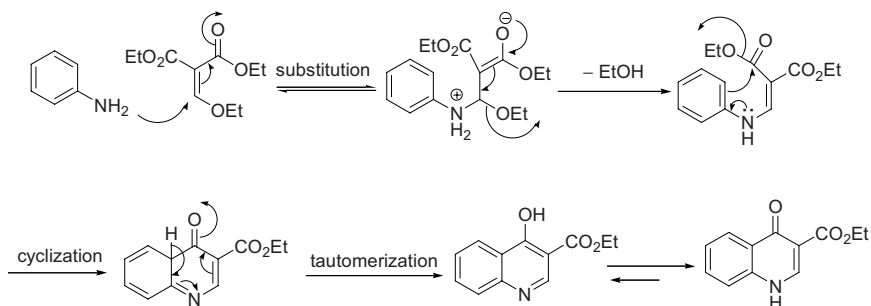
Gould–Jacobs reaction

The Gould–Jacobs reaction is a sequence of the following reactions:

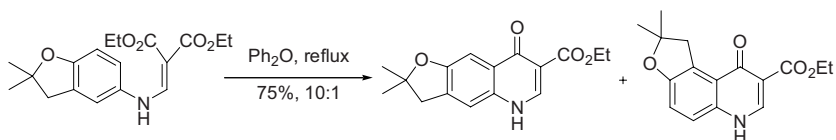
- Substitution of an aniline with either alkoxy methylenemalononic ester or acyl malonic ester providing the anilinomethylenemalononic ester;
- Cyclization of to the 4-hydroxy-3-carboalkoxyquinoline (4-hydroxyquinolines exist predominantly in 4-oxoform);
- Saponification to form acid;
- Decarboxylation to give the 4-hydroxyquinoline. Extension could lead to unsubstituted parent heterocycles with fused pyridine ring of Skraup type.

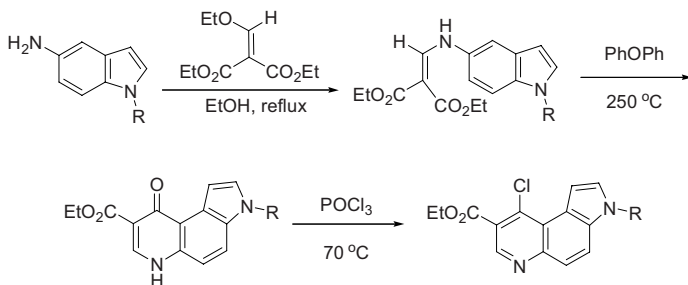
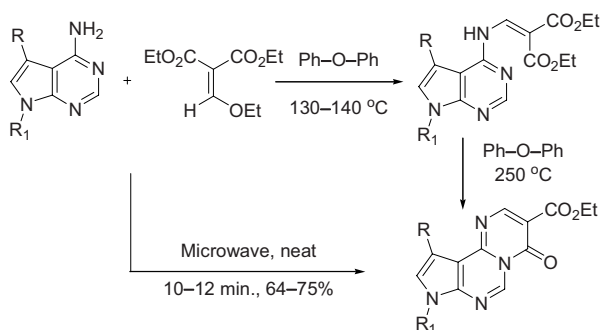
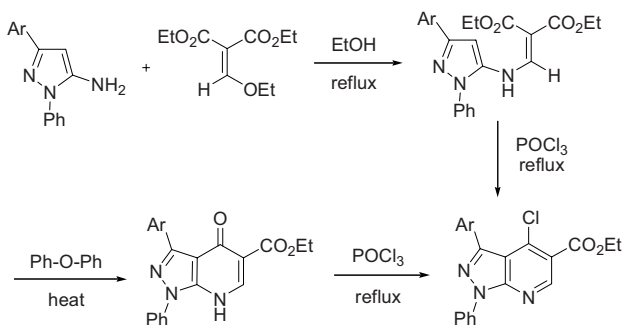


R = alkyl; R' = alkyl, aryl, or H; R'' = alkyl or H



Example 1³



Example 2⁸Example 3, Microwave-assisted Gould–Jacobs reaction⁹Example 4¹⁰

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