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FULL PAPERS

溴化镁催化的**1,2,3,4**-四氢吡啶酮无溶剂合成研究

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摘要 以醛、酮、尿素/硫尿为原料，溴化镁作为催化剂，在无溶剂条件下，用一锅煮的方法合成四氢吡啶酮及其衍生物。与传统的Biginelli反应条件比较，本方法具有反应时间短(45-90 min)，收率高(74%-94%)的优点。由b-二铜、水杨醛、尿素反应产物的结构信息，提出分子内Michael加成的机理。

关键词 四氢吡啶酮,分子内Michael加成,Biginelli反应,氧桥,一锅煮法,溴化镁,无溶剂

分类号

Efficient Magnesium Bromide-Catalyzed One-pot Synthesis of Substituted 1,2,3,4-Tetrahydropyrimidin-2-ones Under Solvent-free Conditions

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Abstract An efficient and environmentally friendly procedure for the one-pot synthesis of tetrahydropyrimidinones from aldehydes, *β*-diketones and urea/thiourea by using magnesium bromide as an inexpensive and easily available catalyst under solvent-free conditions was described. Compared with the classical Biginelli reaction conditions, this new method has the advantage of good to excellent yields (74%—94%) and short reaction time (45—90 min). The structure of the Biginelli reaction product from *β*-diketone, salicylaldehyde and urea has been proposed to possess an oxygen-bridge by cyclization (intramolecular Michael-addition).

Key words tetrahydropyrimidinone intramolecular Michael-addition Biginelli reaction oxygen-bridge one-pot synthesis magnesium bromide solvent-free

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