Convenient Selective Synthesis of Substituted Pyrido[2,3-d]pyrimidones and Annulated Derivatives

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The reaction of 6-aminouracil (1) with the appropriate α,β-unsaturated ketones, gave the corresponding pyrido[2,3-d]pyrimidin-2,4-diones 3, 6, 8 and 10, respectively. Treatment of 1 with salicylaldehyde, 6-carboethoxy-3,5-diphenyl-2-cyclohexenone (13) or 2,6-bis(phenylmethylidene)cyclohexanone (15) afforded the corresponding pyrimido[4,5-d]quinoline-2,4-diones 12, 14 and 16, respectively. Furthermore, a pyrido[2,3-d]pyrimidine incorporating 3,2'-bis(quinoline) derivative 18 was synthesized. Annulation of pyrido[2,3-d]pyrimidine with pyrazole or imidazole moieties was achieved via reaction of 1 with benzylidene derivatives of pyrazolone, imidazolone or 3-carboethoxycoumarin (23) to give 21, 22 and 24, respectively.

Key words: Uracil, Annulation, Biselectrophilic Reagent, Cyclocondensation