Enaminouraciles as Precursors for Synthesis of Pyrimido[4,5-\(d\)]pyrimidine-2,4-diones

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6-Aminouracil, Mannich Reaction, Pyrimido[4,5-\(d\)]pyrimidine

The reaction of 6-aminouracil (1) with formaldehyde and secondary amines in ethanol at room temperature gave the corresponding 5-alkylaminomethyl derivatives (2a-c) and bis(4-pyrimidyl)methane (4). Also, Mannich reaction with primary aliphatic and aromatic amines at room temperature afforded pyrimido[4,5-\(d\)]pyrimidine (5 and 6).

Treatment of 1 with \(o\)-phenylenediamine through transamination gave compound 7 which cyclized through intramolecular Mannich reaction with formalin to yield pyrimido[4,5-\(e\)]-[1,4]diazepine (8).