A NEW, SYNCHRONOUS CONSTRUCTION OF SOME FUSED PYRIMIDINES BY THE REACTION OF 6-ARYLIDENEHYDRAZINO-1,3-DIMETHYLURACILS WITH THIONYL CHLORIDE

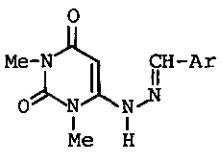
Misuzu Ichiba, Sadao Nishigaki, and Keitaro Senga

Pharmaceutical Institute, School of Medicine, Keio University

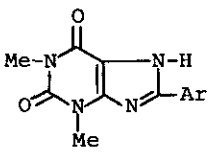
35, Shinanomachi, Shinjuku-ku, Tokyo 160, Japan

We have previously reported that the reaction of 6-hydrazinouracils with thionyl chloride offers [1,2,3]thiadiazolo[4,5-d]pyrimidines and their mesoionic compounds, a new class of heterocycles [J. Org. Chem., 43, 1677 (1978)]. In connection with these findings, we now report the reaction of 6-arylidenehydrazino-1,3-dimethyluracils with thionyl chloride, which results in a new, synchronous construction of some biologically intriguing fused pyrimidines.

Treatment of 6-arylidenehydrazino-1,3-dimethyluracil (I) with excess thionyl chloride in benzene afforded purine (II), pyrazolo[3,4-d]pyrimidine (III), thiazolo[4,5-d]pyrimidine (IV), [1,2,3]thiadiazolo[4,5-d]pyrimidine (V), and pyrimido-[4,5-e][1,3,4]thiadiazine (VI), while the reaction of 6-(arylidene-1-methylhydrazino)-1,3-dimethyluracil (VII) with thionyl chloride gave IV, VI, and pyrazolo-[3,4-d]pyrimidine (VIII). The mechanism for the formation of fused pyrimidines will also be discussed.



I



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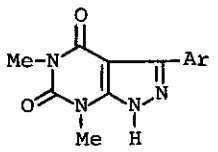

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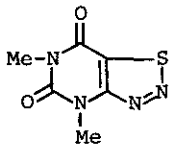

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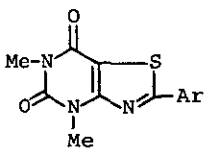
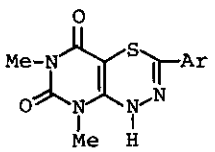
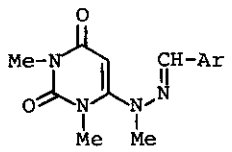


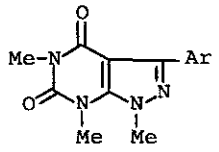
V



VI



VII



VIII