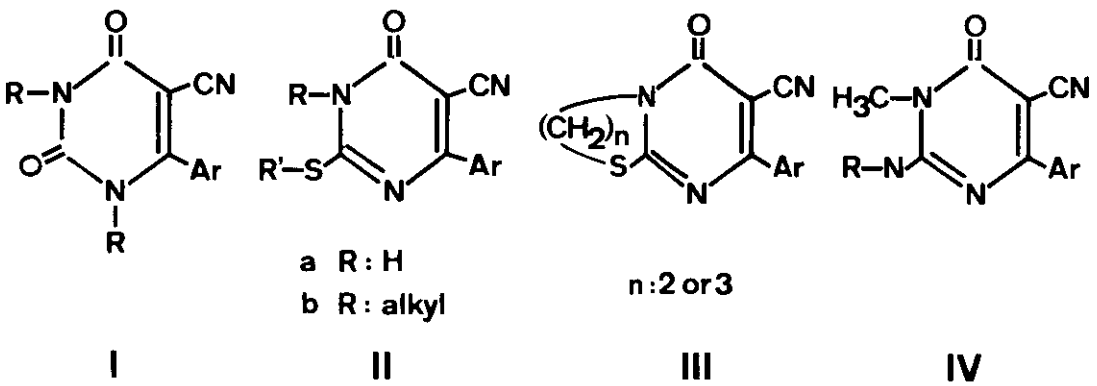
SYNTHESIS AND CHEMOTHERAPEUTICAL ACTIVITY OF 5-CYANO-6-ARYLURACIL- AND 2-THIOURACIL DERIVATIVES.

Vishnu J. Ram[1], A.J. Vlietinck[2] and D.A. Vanden Berghe

[1]) Department of Chemistry, S.C. College, Ballia (U.P.), India
[2]) Department of Pharmaceutical Sciences, University of Antwerp, B-2610, Wilrijk, Belgium.

As a part of a chemoterapeutic research program, a series of 5-cyano-6-aryluracil- and 2-thiouracil derivatives was synthetised. The synthetic sequence started with the preparation of 5-cyano-6-aryluracils and 2-thiouracils according to the procedure of Kambe et al. (1). Alkylation of these compounds afforded 1,3-N-dialkyluracils (I), 2-alkylthiouracils (IIa) and 2-alkylmercapto-3-N-alkyl-4-oxo-5-cyano-6-arylpyrimidines (IIb) respectively. Reaction of 2-thiouracils with dibromoethane and 1,3-dibromopropane gave the corresponding 2,3-dihydrothiazolo-(3,2-a) - and 2,3,4-trihydrothiazino-(3,2-a)-pyrimidines (III).



Nucleophilic substitution of IIb with hydrazine led to the corresponding 2-hydrazino-derivatives, which were used as intermediates for the preparation of 2-acylhydrazino-3-N-methyl- and 2-(pyrazol-1-yl)-3-N-methyl-6-substituted pyrimidines (IV).

Most of these compounds were tested for antibacterial-, antifungal- and antiviral properties, but only a few of them showed significant chemotherapeutical activity.

(1) S. Kambe, K. Saito, H. Kishi, A. Sakurai and M. Midorikawa, Synthesis, 287, 1979.